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ISSUE 357

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"WE'VE GONE BEHIND THE SCENES TO TEST ITS TURN-BASED CHOPS"



There's something wonderful to me about an idea as ridiculous as 'what if orcs played American football?' enduring for 35 years and counting. Not just enduring, in fact – thriving, with a new edition on the tabletop and a new videogame adaptation heading to our PCs this year.

Of course, you need more than a sublimely silly premise

to make a good strategy game, which is why we've gone behind the scenes of *Blood Bowl 3* to properly test its turn-based chops, grill the developers, and even chat to the guys at Games Workshop about their endearingly bizarre creation.

Robin

ROBIN VALENTINE
PRINT EDITOR
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The PC Gamer team



JODY MACGREGOR
Twitter
@jodymacgregor

This month
Said a lot of unprintable things about a set of virtual dice while checking out *Blood Bowl 3*.



WES FENLON
Twitter
@wesleyfenlon

This month
Investigated why Metallica's new stuff sounds like a *Legend* of *Zelda* soundtrack.



ANDY KELLY
Twitter
@ultrabrilliant

This month
Got through an entire preview of the *Gollum* game without making a 'my precious' joke.



TYLER WILDE
Twitter
@tyler_wilde

This month
Learned to hate certain specific medieval weapons of war in *Chivalry 2*.

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MONITOR

NEWS | OPINION | DEVELOPMENT



Developer La Ruina claims he's sought the advice of a lawyer in order to get the game released, so this particular fight may not end here.

SEX DOESN'T SELL

STEAM draws a line on steamy content in games

The major digital storefronts have faced reckonings in recent years, and haven't always come out of them smelling like roses. This is partly because they have kicked certain decisions into the long grass, but are now being forced to come down one way or another. The other side, sadly, comes down to political pressure to de-list games that certain regimes, in this case the Chinese communist party, don't like.

Recent months have seen some of these issues come to a head when Valve, notoriously reluctant to

intervene in the content available on Steam, refused to sell a game called *Super Seducer 3*. SS3 is a full-motion video offering that uses multiple-choice dialogue for the player to go through dates with women.

These are, in other words, rather shoddy FMV games about 'pickup

culture' and are fronted by one La Ruina, who, representing the developer, posted various communications with Valve about why the game had been refused by Steam. Valve's reason was, "Steam does not ship sexually explicit images of real people." La Ruina contends that, with 61,000 Steam wishlists for the game, he is "ready to take a butcher knife to the game" and that it would be "easy enough" to edit it to be as "safe" as other FMV games on Steam, removing the explicit imagery in question. In response, the Valve representative reiterated the company's decision to neither "sell the game or re-review it".

**"STEAM DOES NOT
SHIP SEXUALLY
EXPLICIT IMAGES OF
REAL PEOPLE"**

LEAK PERFORMANCE

ELDEN RING



We got a look at From Soft's upcoming *Elden Ring*... from a video that looked like it had been recorded on a potato. Nevertheless it shows that the *Souls* studio is doing what it does best, but on a grander scale: the footage includes horse-mounted combat, giant dragons, and a character that can jump! ■ **RS**

SWEET DREAMS

THE SIMS 4



After begging and pleading for the better part of six years, *Sims* fans finally got bunk beds in *The Sims 4*. Sure, they were broken and buggy, and turns out the team hadn't actually finished coding them, but they were there! At long last! One bed on top of the other! It's the dream! ■ **MT**

A WRETCHED AND FOUL CREATION

CURSED USB TYPE-C



The beauty of a USB Type-C cable lies in its reversible orientation. Perhaps that's why certified monster, Pim de Groot, created a device that offers two functions depending on which way you up you plug your cable. Thankfully, the device's only purpose today is as a maniacal proof of concept. ■ **JR**



ABOVE, BOTTOM LEFT: After being removed from GOG, developers Red Candle Games said, "This is a difficult predicament to overcome, but we won't stop striving."

ABOVE, BOTTOM RIGHT: PC Gamer's Rachel Watts described *Devotion* as "intimate and engrossing, a horror game that has empathy for its characters instead of treating them like disposable, screaming meat bags."

BACK FROM THE GRAVE

While Valve was drawing these lines, another old decision returned to haunt it and GOG. Released in February 2019 to universal praise, Taiwanese horror *Devotion* only spent a matter of days on Steam before it was removed due to an image it contained of Winnie-the-Pooh along with the word 'moron', which some related to depictions of Chinese president Xi Jinping as said Disney bear.

Since then *Devotion*'s Chinese publisher was shut down by the authorities, and the game subsequently found it hard to sell to a Western audience. Things seemed to take a turn for the better when GOG accepted it for distribution in late 2020. But within a day of the announcement, saying it had received "many messages from gamers", GOG chickened-out and refused to sell it.

The larger context is that platforms which have grown over decades, largely free of any social or ethical considerations, are being increasingly drawn into orbits both personal and political. Refusing games a sales platform, in the age of digital distribution, is the equivalent of exile for their developers. The rationale behind any game being removed from sale should be of concern to players, developers and the platform holders. There are no easy answers: but ad-hoc ones rarely feel right.

Rich Stanton

Highs & Lows



HIGHS

Accept Cookies

Final Fantasy XIV director Naoki Yoshida showed off his lalafell black mage in a seven-hour Twitch stream while baking coffee cookies.

Total domination

The *Total War* series has sold over 36 million copies.

Prepare for Titanfall

Respawn has announced it will be bringing *Titanfall* content into *Apex Legends*, beginning with season 9.

Sub standard

Blizzard's changed how it sells *WoW* game time, so players can no longer just pay for 30 days up-front: it has to be a minimum of 60.

Among duds

The long-awaited *Airship* map arrived for *Among Us* and... it's not great. The huge space makes it trivial for imposters to win.

Cyberfunk

Cyberpunk 2077's latest patch fixes 484 issues – and it's still buggy.

LOWS



The Spy

BUT WHO WATCHES THE SPY?

The Spy is outraged! Incensed! Scandalised! Other synonyms! Having just returned from the dead drop that receives The Spy's subscription of PC Gamer, The Spy was horrified to learn of the existence of a game that glorifies supervillains and the secret bases they're so inexplicably conditioned

to build. The Spy was further appalled to note that this so-called *Evil Genius 2* received a 75% score – a recommendation of all things! After everything The Spy has done for this publication, they go and praise an enemy profession. The nerve!

Clearly payback is deserved, and so The Spy will now release the secrets of the PC Gamer staff – real salacious stuff that is guaranteed to sully the name of this magazine's creators. First, though, The Spy needs to impart some videogame rumours, so as to ensure the team can't justify cutting this page for being a barely disguised personal vendetta masquerading as a column.

First up is Remedy, makers of games that ask high-concept questions like "what if a man could do really slow dives because he is sad?", "what if offices were evil?", and "what if writers were interesting?". *Control*'s final DLC featured Alan Wake, leading many to assume it was teasing a sequel to the flashlight-wielding author's

own game. And recently, GamesBeat's Jeff Grubb claimed, during a Twitch stream, that Remedy's next game would be an *Alan Wake* sequel. Who could have guessed?

We already knew that Remedy – who now own the *Alan Wake* licence, after acquiring it from the first game's publisher, Microsoft – is working on two games for Epic, one big and one small. Grubb went on to claim this marks a change in strategy by Epic, whose game store went on a tear snapping up exclusives to the chagrin of Redditors everywhere, towards funding and publishing original games instead. Will that placate the angry forum men?

FIELD WORK

Speaking of anger, that's what The Spy felt on seeing *Call of Duty* leaker Tom Henderson's claim that the next *Battlefield* game will be called – wait for it – '*Battlefield*'. If true, it will follow previous *Battlefield* games like *Battlefield V* and its direct predecessor *Battlefield 1*. The Spy assumes that, having worked so hard to make numbers absolutely meaningless, DICE now feels comfortable doing away with them entirely.

Henderson claims *Battlefield* will be set in the near future – so there'll be robots – and that it will feature a "revolutionary campaign" in which, rather than being part of a specific country's standing army, you lead a specialist team that both of the game's superpowers – USA and Russia – will be attempting to recruit during the campaign.

As for multiplayer, Henderson claims that it will have "bigger and better battles", which doesn't tell us anything, but does at least offer some fun alliteration. Henderson also suggests that battle royale will be returning, although not as a part of *Battlefield V*'s Firestorm mode. Instead it will adopt a new name, and introduce an ability-style system similar to *Warzone*'s perks.

And with that, it's time for The Spy's revenge. First to the firing line is UK EIC Phil Savage, who, despite having written plenty about *Apex Legends*, is languishing on a pathetic 0.69 KD/R. And what of editor Robin Valentine's embarrassing addition to... wait, shit, The Spy is out of page space. ■
The Spy



THE SPY
The Spy will defeat all evil geni, too.

THE NEXT BATTLEFIELD GAME WILL BE CALLED – WAIT FOR IT – 'BATTLEFIELD'

This month in... 2011



1 Tom Francis' *Mass Effect 3* cover feature leads a bounty of exciting previews. Elsewhere there's a hands-off report from a little game called *Skyrim*, and some fresh info on the irresistibly exciting *Prey 2*. Alas, one of these games would never make it to release, while the other has been released multiple times across multiple platforms and versions.

ISSUE
227, June 2011
ON THE COVER
Mass Effect 3
IN THE CINEMA
Thor



2 *Portal 2* heads up our review section. "Valve's platform puzzler sequel makes you feel like the dumbest genius ever," writes Dan Stapleton.

3 Craig Pearson predicts the future of indie gaming by rounding up some of the most exciting upcoming ideas from small PC creators. Some – *Frozen Synapse* and *Nidhogg* – were absolute classics. Others – *Monaco* and *Confetti Carnival* – didn't make much of a splash. One – *Spy Party* – is somehow still in Early Access.



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Special Report

PCG INVESTIGATES

Music copyright laws are putting Twitch – and streamers – in an increasingly tricky position.

FACE THE MUSIC

After DMCA takedowns, Twitch has to make peace with the music biz

Metallica never scored a *Legend of Zelda* game, but it sounded like it when Twitch replaced Metallica's BlizzCon 2021 concert with cheery midi music. The biggest streaming platform in the world had to censor its own broadcast or risk upsetting an already aggravated music industry.

In 2020 the music industry attacked Twitch in a letter claiming it “continues to turn a blind eye to the same users violating the law while pocketing the proceeds of massive unlicensed uses of recorded music”. After largely ignoring Twitch for years, the music industry started sending thousands of DMCA takedowns for copyright violations. So Twitch reacted – dramatically. In October, it forced streamers to delete thousands of old VODs, with no good tools to determine which files were problematic.

The music industry is upset with copyrighted music in livestreams and VODs, but Twitch's existing solutions are all for the latter. It also insists that Twitch needs to pay for broader licences for its Soundtrack tool, which is meant to let streamers play licensed music safely. If the music industry continues to press, is that Metallica concert just a preview of what enforcement will look like in a few years, with automated tools detecting and silencing copyrighted material live, instead of just cleaning up VODs?

“[That's what] I would expect,” says Kellen Voyer, a lawyer who specialises in IP and technology law. “With all new technology there's a period of freedom, then a teething period, then some form of equilibrium between the technology and rights holders. Then another technology emerges and it starts all over again.”

GETTING TWITCHY

Twitch today is firmly into its teething period. In November, Twitch told streamers that “things can – and should – be better for creators” and laid out plans for tools that will make it easier for streamers to manage copyright on their channels. What it hasn't said much about is what Twitch can do to prevent those DMCA takedowns.

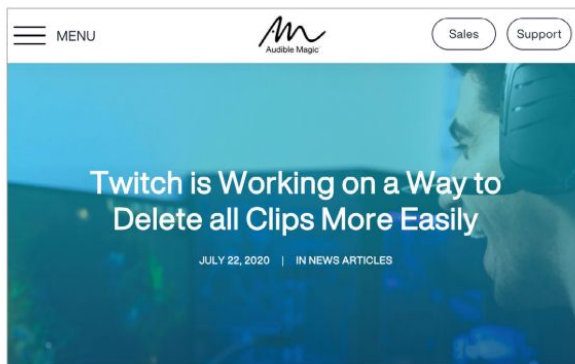
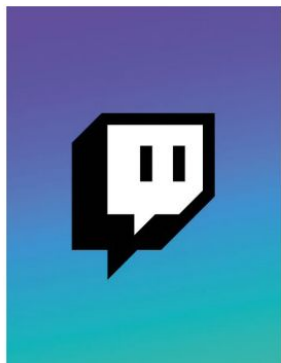
Twitch Soundtrack, launched last year with a selection of licensed music, seemed like a solution. But the music industry claims Soundtrack doesn't include all the licensing it should. What's missing? Synch rights, which are complicated. Synch rights apply to the pairing of music with imagery. Twitch claims Soundtrack is “fully licensed”, but its argument is based on an interpretation of the law that would mean synch doesn't apply to streams. The music industry doesn't see it that way. So why the admonishing letter and not a lawsuit?

“I expect the RIAA and other groups are holding out for a deal being struck with Twitch,” says Voyer. “They've



Synch rights

The music industry insists Twitch pay a “synchronisation” licence, but when exactly synch applies is ambiguous. “If the live stream is truly ‘live’ many rights users take the position that the musical composition does not need to be cleared, as it is not ‘fixed’ with the visual images and therefore does not implicate a copyright owner's exclusive rights,” explains the Reed Smith guide to livestreaming.



LEFT: Twitch is using a service called Audible Magic to detect copyrighted music in archived material and mute it automatically.

KEEPING WATCH *Twitch's troubled history with music copyright*

JUNE 2011
Justin.tv spins its gaming content off into a new division called Twitch – its popularity leads it to subsume the company.

AUGUST 2014
Twitch first starts using software to automatically detect and mute copyrighted music in archived streams.

JANUARY 2015
Twitch offers a library of royalty-free music for creators to use in their streams.

JUNE 2020
Twitch receives a huge amount of DMCA takedown notices related to copyrighted music in archived content.

SEPTEMBER 2020
Twitch Soundtrack is announced – a library of pre-approved music to use in streams.

OCTOBER 2020
Streamers are forced to delete archived streams featuring copyrighted music at short notice.

NOVEMBER 2020
Twitch issues a sort of apology for DMCA issues and publishes a guide for creators on avoiding them.

FEBRUARY 2021
Metallica's BlizzCon performance is dubbed over with what sounds like easy-listening elevator music.

had a long history of protracted, public battles over new technologies that have never ended exactly as they want and often been bad for PR. There's a lucrative relationship that could result should the parties ink a deal so continuing to push outside of court is a way to pursue this option."

Facebook Gaming signed a deal with major record companies to allow for licensed music in both livestreams and VODs. There are still limits to what songs can be played, but it's a "throw money at the problem" solution that takes some of the risk away from creators.

Twitch Soundtrack included about one million songs at launch, but doesn't have deals with any of the major music companies that Facebook does, like Warner, Universal, and Sony. If big-name partnerships and a licensing deal aren't in Twitch's future, it seems likely some kind of automated copyright system for livestreams will be.

YouTube's system, Content ID, is designed to scan videos and compare them against a database of copyrighted material. Content ID can even monitor livestreams and shut them down when they contain copyrighted content. Twitch uses a service called Audible Magic to detect copyrighted material and mute it in VODs and clips, but it doesn't work in real-time.

STOP THE MUSIC

Content ID has some real drawbacks for YouTubers. Mismatches can trigger undeserved bans, and the Electronic Frontier Foundation argues that it's too good at

flagging music, bulldozing over situations that should be considered fair use in the US.

That's not the major issue Twitch streamers are dealing with today, but if Twitch adopts technology that scans for copyrighted material live, not just in VODs, it could lead to big changes. Voyer thinks it's one possible outcome, if the music industry keeps pressing. Right now, Twitch is focusing on tools for streamers, like the ability to more easily delete batches of VODs and better DMCA notifications. If Twitch is planning new licensing deals or a content matching system that works live, it's not talking about those plans publicly.

"I expect most streamers want to use music without having to worry about licences, that's their best internet experience," says Voyer. "Conversely, the artists want exposure but also compensation for the use of their works, that's

their best internet experience."

A solution like Content ID for live streams would probably mollify the music industry – and address its claim that "Twitch continues to turn a blind eye to the same users repeatedly violating the law" – but would also likely come with the same baggage the Electronic Frontier Foundation laid out. If Voyer's right, copyright issues will continue to build on Twitch until something breaks, "You can't appease both sides 100%, but I feel that a new normal will appear after this current period of tension (which I expect will only increase before it gets better)." ■

Wes Fenlon

THE MUSIC INDUSTRY IS UPSET WITH COPYRIGHTED MUSIC IN LIVESTREAMS AND VODS

Positive Influence

INSPIRATIONS AND CONNECTIONS IN GAMES

ALTAÏR-NATEPAST

How *Assassin's Creed* creator **PATRICE DÉSILETS** became gaming's cool teacher

History loomed over the young Patrice Désilets. Aged three or four, he would meet his mother as she came off the boat from the French fort where she worked on the Richelieu River. The Quebec waterway had been a crucial path for French and English armies during the era of European colonisation, and the scene of several bitter battles. But for Désilets, three centuries on, these ruins represented a kind of reverse science fiction.

"The past is like a fantasy land," he enthuses these days. "It's so different. Where we are now, it's as if it's on a different planet. The 20th century just changed us, totally. But this is where I'm fascinated by us – we think we're at the end of it. I like to look behind and let a player experience how we were." It just so happened that, as Désilets finished up the creative direction of *Prince of Persia: The Sands of Time* many years later, Ubisoft's marketing team was on the same dusty page.

"I received a mandate back then to do the sequel to *Prince of Persia*, for the next generation of consoles," he says. "And I was asked to redefine the action-adventure genre. I remember having a discussion with marketing people, saying 'OK, we just did a fantasy game, and maybe now the next big thing would be history.'"

Désilets returned to his college books, and found a tome on secret societies. There he discovered the myth of the old man on the mountain, and his dreaded sect of assassins (derived from the Arabic 'hashishin', incidentally, meaning 'those who use hashish'). "That's in Iran," Désilets realised. "That's Persia. You could be the prince of

the assassins." Ultimately, of course, the *Prince of Persia* license fell away, and the game Désilets and his team made was *Assassin's Creed*. One less overt influence on the finished game was *GTA*. "I guess a lot of games in the beginning of the 2000s were inspired by it," Désilets says. "Exploring *GTA*, my pleasure was just to be in this game world and see the sun rise. So it was like 'Can we replace the car with the main character? In *GTA* I can go anywhere with the car, can I go anywhere with the character?' That's why we had the parkour."

LEGACY GAMES

Ironically, by the time the series reached the colonial era that had so inspired Désilets as a young boy, he was no longer at Ubisoft and found himself unable to appreciate *Assassin's Creed* as a player. It felt too much like he was QA testing, rather than having fun. "I haven't played any of them since the third one," he says.

What Désilets carried forward from *Assassin's Creed* was a fascination with DNA. His games posited that memory was passed down between generations – connecting us to our ancestral past, just as that fort did on the Richelieu River. The idea of DNA as a storage device eventually spawned a whole new game, in the form of *Ancestors: The Humankind Odyssey* in 2019.

A survival game set across a span of eight million years, *Ancestors* tasks you with guiding an ape clan from all fours in the African jungle to a bipedal, proto-human existence hunting prey with tools across grasslands. More than any other game in Désilets' catalogue, it shows the past to be as alien as fantasy – a treetop realm of poisonous foods and oversized snakes.

Ancestors is a harsh teacher, and Désilets believes in the teaching potential of games. "Some teachers get it, and they use play, they don't fight it," he says. "This is homo sapiens, this is how we learn, through play. Learning is about trial and error. But it's not something I think about that much. What I think about is doing a good job with my research and knowing my subject matter, so that if you want to know more about what you just experienced, there is a real thing out there you can go and teach yourself."

Even now, Désilets encourages his team not to bend reality when the answer to a game design problem might be found in fact. "It's my 30 seconds Wikipedia rule," he says. "If information can be found in 30 seconds on Wikipedia, it's got to be on point." ■

Jeremy Peel

NAME CHECK

Why is Désilets' studio called *Panache*?



1 IT'S FRENCH

"My own ancestors came from France and settled in 1652 on the banks of the Saint Lawrence River."

2 IT'S ABOUT STYLE

"I had this idea of making games with flair, that are different."

3 IT'S INTERNATIONAL

"It's a French word that English-speaking people would understand."

4 DEER?

"I was in a cabin in the woods, and in French-Canadian an antler is called a 'panache'."



**MORE THAN ANY OTHER GAME IN
DÉSILETS' CATALOGUE, IT SHOWS THE
PAST TO BE AS ALIEN AS FANTASY**



LEFT: *Assassin's Creed II* remains the creative highpoint of Désilets' career.

ABOVE: An earthquake was the in-fiction reason for *Prince of Persia*'s deadly jumps.

A full-page background image featuring three characters from Call of Duty: Warzone. In the center is a female character, likely a member of the Operators, wearing a tactical vest with multiple magazines, a headscarf with a sunburst pattern, and a headset with a microphone. To her left is a character in a full tactical suit with a skull mask and goggles, holding a handgun. To her right is a male character in a tactical suit with a grid pattern on the shoulder, holding a large machine gun. The background is a hazy, orange-tinted battlefield scene.

WARZONA racing

NEAGES EXPLORED

**ACTIVISION WAS SITTING
ATOP ITS NEW CALL OF DUTY
EMPIRE, AND RAVEN WAS TO
BE ITS SCAFFOLDING**

CROW'S NEST

How Raven Software became kings of *COD* after vanishing from view

Putting out a *Wolfenstein* game ought to be the highlight of any developer's career. It was the making of MachineGames and Gray Matter Interactive, which became the backbone of Treyarch after *Return to Castle Wolfenstein* – not to mention id Software, whose tribute to a prison-break game launched the FPS genre.

But for Raven Software, it was a disaster. There was nothing wrong with the game, as such: *Wolfenstein* (2009) is a perfectly serviceable shooter, with an arsenal of impossible weapons built for colourful Nazi evisceration. But it was also a doggedly faithful sequel to Gray Matter's *Return to Castle Wolfenstein*, and by that time the b-movie blankness of BJ Blazkowicz seemed terribly old-fashioned. The eight years between the two games had seen *Halo*, *Half-Life 2*, and *Bioshock* – a sea change in the sophistication of first-person adventures. Beyond a surface-level nod to *City 17* with a train station opening, Raven had simply failed to learn the lessons of its peers. *Wolfenstein* shifted a meagre 17,000 copies on PC in its first 12 days on sale, and layoffs followed.

The following year, Raven released *Singularity*, an ambitiously-planned FPS that was about time manipulation. Its dependence on audio logs made it clear the studio *had* paid attention to *Bioshock* – but only because in a desperate seven-month sprint to finish a sprawling, nearly-cancelled project, the team needed a way to fill the gaps in its dramatically cut-back story. Delays meant overshooting Activision's planned marketing push, and financial failure became inevitable. Three teams shrank to two, shrank to one, like the crushed boxes in *Singularity*'s uninventive puzzles.

RANDOM TASKS

Another studio might have closed down. But in an instance of extreme foresight, Raven's founding brothers

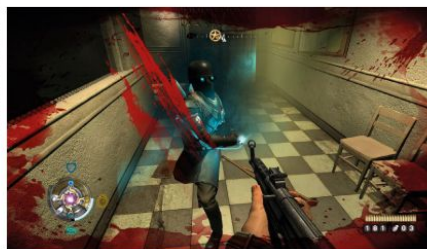
had sold the company to Activision in 1997. Back then, Bobby Kotick and company were only the 15th largest game publishers in the world; luckily, that had changed by 2010. Activision was sitting atop its new *Call of Duty* empire, and Raven was to be its scaffolding.

That might not sound like glamorous work, and it isn't. If they got to choose, no developer would become a support studio. These many hundreds of artists, programmers, and producers are the unsung heroes of game development, enabling the creation of your favourite AAA games. But their names never grace the lips of fans, unless those fans pay particular attention to credits or splash screens. The role of the support studio, as its title suggests, is subservient: they are beholden to the creative vision of other teams, fulfilling the dreams of designers they may not ever meet.

However, Raven sucked it up. The studio made DLC for the original *Call of Duty: Black Ops*, and helped out with "random user interface and engineering tasks", as Infinity Ward's Robert Bowling bluntly put in an interview with *GamerZines* in 2011. Lead producer

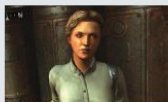
Charles Weiss was there to see the company give up on its own game ideas and refocus its energies on the needs of others. "Adapt or die," he later told the Activision blog. "This has been a motto at Raven as long as I can remember, and it has always stuck with me."

BOTTOM: "Look all around you," boasted *Heretic*'s marketing, "even up and down."



WOLF PACK

Wolfenstein elements that survived the reboot



CAROLINE BECKER

A determined resistance leader who spends much of the game staring at a map. Her backstory was retained for MachineGames' sequels, in which she's older but power armoured.



WILHELM STRASSE

Occupies a zeppelin over Isenstadt, from which he orders Becker's capture. He returns as the antagonist of *Wolfenstein: The New Order*, played by The A-Team's Dwight Schultz.



THE KREISAU CIRCLE

An anti-Nazi paramilitary network that first appeared in *Return to Castle Wolfenstein*. By the '60s it's operating out of a giant U-boat, supplying BJ with intel and a sense of family.

BIRD'S EYE VIEW

30 years in the shooting business

KEY

- Raven Software
- id Software
- Gray Matter Interactive

RETURN TO CASTLE WOLFENSTEIN
Gray Matter's hit stealth-shooter.

WOLFENSTEIN
A faithful sequel. Too faithful.

WOLFENSTEIN 3D
Created the genre that would define Raven.

DOOM
Demons, gibbs, and a very useful engine.

QUAKE II
id's first attempt to tell a story. With aliens.

CALL OF DUTY ONLINE
Made specially for China.

WARZONE
Everyone's new pandemic hobby.

BLACK OPS: COLD WAR
Raven built its brave campaign.

BLACK CRYPT
An RPG, since the FPS didn't exist yet.

SHADOWCASTER
The most advanced id Tech game of its day.

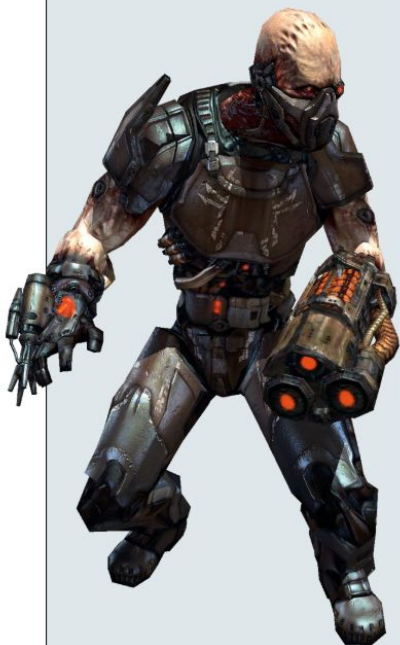
HERETIC
Like *Doom* but with wands.

SOLDIER OF FORTUNE
Famed for its dismemberment.

JEDI KNIGHT II: JEDI OUTCAST
The best ever Star Wars game, some say.

QUAKE IV
A sequel to the Strogg campaign.

SINGULARITY
A messy time travel yarn.



WISCONSIN WIZARDS

In a sense, Raven had been a support studio once before – one of the very first. In the early '90s, keen to make the most of the *Doom* engine, John Romero had flown up to Wisconsin to teach Raven how to use his tools. He and the studio's founders, Steve and Brian Raffel, had a love of Dungeons & Dragons in common – and in fact, Raven's debut game *Black Crypt* was originally intended to be a tabletop adventure module.

Under Romero's direction as executive producer, Raven built *Heretic* – which was a dark fantasy FPS in which Doomguy's stand-in flew and fired a magical crossbow. Romero got to scratch a creative itch, and Raven's relationship with id carried it all the way to *Wolfenstein*, which was released in 2009.

"[A] reason I believe we have been successful and around for 30 years is we have always been collaborative people," Brian Raffel told the Activision blog in 2020. "If you look at our history of the games we have worked on, you will see we have made many of them in a collaborative setting."

Raven's place in the castle of *COD* wasn't so different from its role on *Heretic*. Headline studios like Infinity Ward and Treyarch got most of the credit, but Raven got the security it needed to grow again. The irony was that, while the studio had become invisible to the public, its work was being played by more people than ever before. It became the lead developer on *Call of Duty Online*, a game Westerners are almost completely unaware of, but has served a Chinese audience for more than half a decade. Chinese *COD* fans were testing an 18-player battle royale mode several months before *Blackout* came out.

RAFFEL WINNERS

When the time came to make *Warzone*, Raven was perfectly poised. By all accounts, it worked as one with Infinity Ward, coordinating on Verdansk's uniquely



LEFT: Raven was responsible for a bestselling and beloved Star Wars game, *Jedi Knight II*.

IT'S RAVEN SOFTWARE THAT SIGNS OFF THE PATCH NOTES OF THE BIGGEST FPS IN THE WORLD

complex map design. And in an unexpected role reversal, Infinity Ward has faded into the background since the game became the pastime of 80 million players. In 2021, it's Raven Software that signs off the patch notes of the biggest FPS in the world.

As Raven has reemerged from behind the iron curtain of Activision's studio system, it's been able to revive some of its mothballed ideas too. Dan Vondrak, the man who shepherded *Singularity* over the line, headed up *Black Ops: Cold War*'s campaign – a return to the Soviet conspiracy themes of his previous game. There's even been a reprieve for *Wolfenstein*'s underdeveloped hub town, Isenstadt – a network of compact German streets that connected the game's missions, and disappointed many critics at the time. By focusing solely on a single Berlin safehouse for *Cold War*, Raven was able to fill a new hub with real depth. This time, it wasn't just connecting missions but characters, pushing the campaign's cast to bounce off each other in fantastic performance captured encounters.

Finally, working on *Wolfenstein* has come good for Raven – it just needed a decade to feel the benefit. ■

Jeremy Peel



PREVIEW





NEED TO KNOW

RELEASE
June 8, 2021

DEVELOPER
Torn Banner Studios

PUBLISHER
Tripwire

LINK
chivalry2.com

CHIVALRY 2

Tempered steel and temper tantrums on medieval battlefields

I know I'm getting salty when the big sures start coming out. Oh, sure, I guess that enormous axe blade just chopped my head clean off and I died and everyone trampled on my bloody corpse while it flopped around in the mud. Yeah, sure, that's just fine!

I really enjoy this stupid game, but *Chivalry 2*'s multiplayer medieval battles are infuriating sometimes. Every time you spawn, you've got to run for ten seconds or longer to get to the front line (spamming C to yell "rauugh" helps pass the time), and when you get there, you might be poked to death instantly by three guys with spears, or mobbed by shiny knights, or, worst of all, shot through the eye with an arrow. Oh, sure, why wouldn't you stand 20 yards away from the fight and shoot arrows at me? *You joker.*

I should really hit Alt-F4 and call it a night when I'm getting mad at the concept of archery, but the prospect of going on a spree beckons me from beyond the respawn timer. I love a good spree. Example: after putting up a disappointing K/D during one objective-based match, I switched to a two-handed hammer I'd just unlocked and, for a minute, turned the game into a gritty Three Stooges reboot as I bonked head after head, producing a series of metallic *thunks* followed by squishy *splurts*. I stopped giving a crap about the objective, a line of trebuchets my team was supposed to blow up, and entered pure *bonk* mode. I *bonked* out 11 kills before they hauled me down.

KNIGHT SCHOOL

When I say that *Chivalry 2*'s melee combat is nuanced, I suppose I really mean that the *possibility* for nuance exists. With one of the *many* melee weapons, you have three main swings (typically a horizontal

slash, a stab, and an overhead strike, each with light and heavy variants), a special attack, a sprinting special attack, a kick for breaking blocks, and a jab to interrupt. You can cancel attacks, feint, throw your weapon, block, and counter with the right timing. You can dodge backwards and to the sides, and you can duck. It's exciting to imagine using all these options: *I'm going to thrust, and they'll block, but then I'll cancel, and I'll kick, and then, and then –* and then some guy named Freemason_Hog111 busts the back of my head open with a morning star while jogging by.

Maybe the mind games will come into play in one-on-one duels, but what developer Torn Banner is showing off prior to *Chivalry 2*'s summer release are 64-player medieval mosh pits: team deathmatch and attack-and-defend maps that start with all the players lining up and charging at each other. I did not fool anyone with feints. You can't really trick an executioner's axe that's already set an collision course for your neck.

The big, heavy weapons take skill, too, though. You've got to shove your way into fights at just the right moment and make your opponents whiff, or hit the perfect block timing. Kicking and jabbing are useful, and many players forget about them. Most importantly, you've got to remember to use your mouse. It doesn't just change where you're looking in the first or third-person views, but also what you're aiming your sword or polearm or mace or axe at and the orientation of your chest, twisting or bending your character at the waist. Swipe your mouse in the direction of a strike animation and you'll connect faster and swing in a bigger arc. Against opponents who aren't minding their mouse movements, you can dominate with just that skill.

There are weapons that are just easier to score kills with than others, though, and that led to some of my frustration. I stubbornly wanted to prove that I could dominate with a basic-ass sword, but I wasn't good enough. I *like* that *Chivalry 2*'s

PLAYED
IT

THERE ARE WEAPONS THAT ARE JUST EASIER TO SCORE KILLS WITH THAN OTHERS

Chivalry 2



The shiny knight armour looks great.



On my way to Burning Man.

✱ weapons feel unbalanced, though. If I wanted to rise to the top of the scoreboard, I should have grabbed a big axe and tried to best the other team's top players at their own game. And if I wanted to humiliate knights with finesse, ducking under their greatswords and jabbing at their kidneys, I could try – and fail, and get incredibly salty about it.

I wasn't the only one reacting a little emotionally, either – the chat got a little chippy on day three of the alpha. It's funny that such a goofy game got tempers going across a weekend. You can drop anvils on people, dance and taunt instead of fighting, throw all of your weapons at someone and then try to punch them to death. *But can we get on the ***** objective, please? Hello?*

Mordhau, a medieval warfare game from another developer, gained a reputation for attracting assholes. Aside from a vote kick function (which I only saw used spitefully), *Chivalry 2* will include player reporting, and chat can be turned off. I doubt it'll be enough to prevent asshole, but nothing ever really is.

One thing I love is that after you're killed you can press F to commend the player who got you, which sends them a notification and some bonus points. It's nice to be able to say "good swing, bud" with a keypress. It's especially fun when you've got a little rivalry going, and you and the same player have nodded to each other a few times. *Not* commending a player can also carry meaning: *Thanks for butting into that duel with a lucky shot.* I'll never commend a filthy archer, of course.

TAKE A BOW

I really do hate archers. I'm sure they're having fun, but I just don't like getting an arrow in the face while I'm trying to riposte, and I wouldn't mind playing on 'no archery' servers, if such a thing exists at launch. (There's some good news in that general respect: *Chivalry 2* has a proper server browser, not just matchmaking.)

I also don't like the class abilities. Footmen have healing packs that they can limply chuck at teammates, which just feels pointless when knights can blow horns that heal every teammate around them. I really despise the fire bombs

thrown by vanguards. I hate having my vision obscured by flames in the middle of a sword fight, when I'm trying to put all that *nuance* to use. Maybe it's my problem, though: I'm trying to play a medieval battle simulator as if it's a sword fighting simulator. Torn Banner is very clear that *Chivalry 2* is the former.

"Our primary influence is Hollywood," Torn Banner president Steve Piggott says. The maps are sectioned into well-defined sets: storming the beach, battering down the gates, defending the town square. In one, the top player on the defending team transforms into the 'heir' for the final stage, becoming a VIP who has to be protected by their team (but fights powerfully, too). I was the heir once. Very fun, and I like how *Chivalry 2* encourages goofing off even in vital moments. You've got special emotes as the prince, you can sit in the throne, players can kowtow before you. That playfulness helps keep the mood below the rage quit line.

The trick will be getting players to keep coming back, something the first *Chivalry* and *Mordhau* have struggled with. Crossplay may help with that, though Piggott thinks the most important thing is that *Chivalry 2* feels fair even when you die, and that players "know how to get better". A good tutorial helps with that, but also clarity in the animations and netcode – you've got to know what you did wrong to know how to get better, and that's hard when you can't trust what you see.

DIAL IT IN

What I find really encouraging is something Piggott tells me about the way *Chivalry 2* is constructed. "We know that players are going to find things that we didn't realise," he says, "so we built the system to build the game in a way that we can tweak all those things. We have a million different knobs and dials."

Chivalry 1, in contrast, was more or less stuck the way it was when it was done, a consequence of it being made by "amateurs all over the world". I look forward to seeing how this pro Torn Banner team tinkers with the meta.

The studio will also add new maps and other stuff after release, including something it decided to spend some extra time on: horses, which will be able to "kick in all directions". I look forward to saying "oh, sure, that's *fair*" after getting hoofed in the back of the head while failing to take out an archer with ducks and dodges. That's the nuanced combat I crave.

Tyler Wilde

FOOTMEN HAVE HEALING PACKS THAT THEY CAN LIMPLY CHUCK AT TEAMMATES



The Lord of the Rings: Gollum



Not quite the Gollum we know from the movies, but close enough.

NEED TO KNOW

RELEASE
2022

DEVELOPER
Daedalic

PUBLISHER
In-house

LINK
daedalic.com

THE LORD OF THE RINGS: GOLLUM

A familiar story from a different perspective

An air of mystery has surrounded *The Lord of the Rings: Gollum* ever since it was announced by Daedalic back in March 2019. The studio has outlined its grand vision for the game: to tell the story of the destruction of the One Ring from the perspective of Gollum, rather than the Fellowship.

But now, finally, I get to see the game in action, and get a sense of how it might actually *play*. Alas, it's a hands-off demo, and the developer playing it says the build is ten months old. So I'm not getting a totally accurate picture of what the finished game will be like.

Gollum has been imprisoned in Barad-dûr, the colossal tower built by Sauron in the fiery heart of Mordor. The Dark Lord's stronghold looks massive from the perspective of the diminutive former hobbit. Luckily he's an expert climber.

The developer controlling the demo notes that Gollum has been clambering around Middle-earth for around 500 years, and has developed superhuman strength and climbing skills as a result.

He can run on walls, swing on poles, slide down cliffs, and crawl up certain surfaces. He may be a wretched monster tormented by the power of the One Ring, but he's very nimble on his feet.

In the build I'm shown, Gollum's animations are in pretty rough shape. I watch him scramble around Barad-dûr, and it feels very... *placeholder*. There are no smooth transitions between his various

states – running, climbing and swinging – which makes it look stiff and robotic.

Gollum is trying to reach the immense gate that leads out of the tower. There's no map screen or minimap in the game, so you have to pay close attention to the environment to find a way your way there. At one point Gollum acquires a hand-drawn map scribbled by an orc, but as you might expect, it's not that easy to read.

The scale and detail of the tower is impressive. It's all jagged obsidian spires and snaking rivers of bubbling lava, which is exactly the kind of interior decoration you'd expect from an edgelord like Sauron.

Daedalic says its approach to level design in the game will give players a lot of freedom. There will, apparently, be multiple ways to get through an area, which I get a sense of as I see Gollum picking a route through Barad-dûr.

Gollum is not a fighter, meaning stealth plays a prominent role in the game. Another of his abilities is having a keen sense of hearing – especially in the dark.

MY PRECIOUS

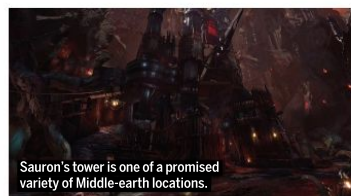
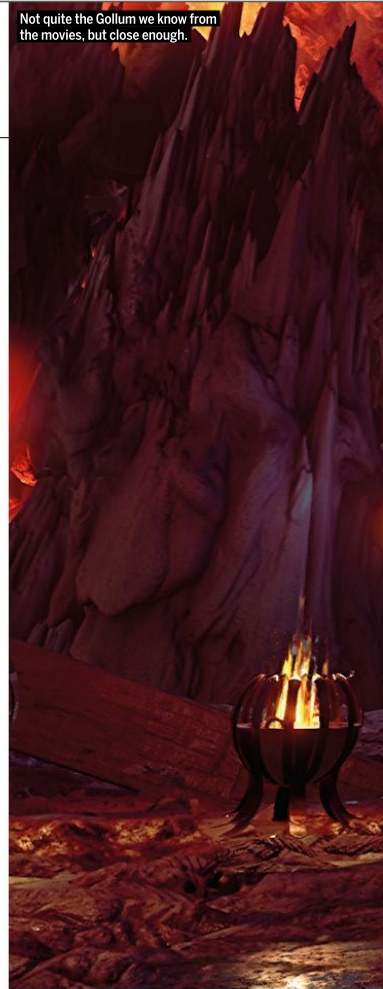
This wasn't implemented in the demo I saw, but in the finished game you'll be able to see sounds, helping you find enemies and predict their movements. If you manage to isolate a lone orc, Gollum can knock them out – but this takes a long time and generates a lot of noise.

One of the most interesting things about Gollum is the raging internal battle between his current self and Sméagol, the hobbit he used to be before the ring polluted his mind. At certain points in the game you're forced to make a choice, deciding whether to react to something as the violent, bitter, duplicitous Gollum, or the meek, kindly Sméagol.

It's an intriguing concept, but I was thrown off a bit by the portrayal of the character. This game is based purely on the books – as a fan of the films I struggled a bit with hearing someone other than Serkis performing the role.

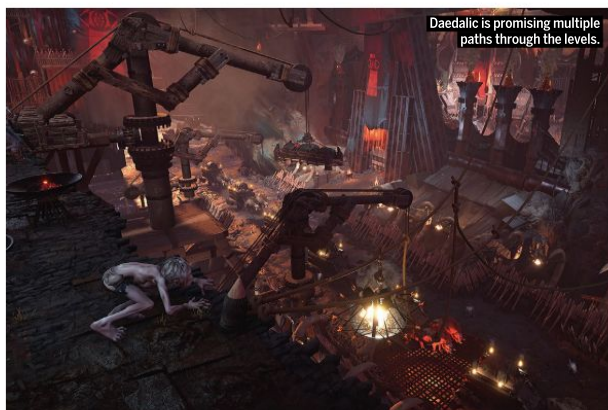
That's gonna take some getting used to. But Daedalic has promised that it will remain faithful to the source material, which means we might not see anything as egregious as *Shadow of War*'s bizarrely sexy Shelob here.

Andy Kelly



Sauron's tower is one of a promised variety of Middle-earth locations.

GOLLUM IS NOT A FIGHTER, SO STEALTH PLAYS A PROMINENT ROLE IN THE GAME

The Lord of the Rings: Gollum

PREVIEW

Age of Empires 4

Riding an elephant has to be way more fun than manning the wall.



Love the fort within the fort as this civilisation grew.





NEED TO KNOW

RELEASE
Autumn 2021

DEVELOPER
Relic Entertainment

PUBLISHER
Microsoft

LINK
ageofempires.com

AGE OF EMPIRES 4

Adding a new dimension to wargaming

I mean it as a compliment when I say *Age of Empires 4* looks like *Age of Empires 2*. It's 20 years newer and 3D instead of 2D, but the blue splotches on buildings and the peasants working the fields catapult me back to my obsession with building armies of Teutonic knights who lumbered across the battlefield like better-dressed Terminators.

"We knew we wanted to make a modern version of *Age*, but we also wanted to make a game that felt like *Age of Empires* and would be immediately relatable to the core community," game director Quinn Duffy said at a roundtable, where the *Age of Empires 4* team talked about the game in-depth for the first time. I only got a relatively brief look of *Age of Empires 4* in motion, but that was enough to pick up on how many changes can be called *modern*.

The terrain is gorgeous and takes full advantage of being 3D with dramatic cliffs and hills that will give an advantage in combat. Units in each civilisation now speak their own native language and their audio will change from one age to the next. The whole world will even become more vibrant and saturated as you progress out of the dark ages and approach the Renaissance.

Though there are still generic units shared between factions, retaining the triangle of cavalry, ranged units, and pikemen, civilisations are now more asymmetric. The Mongols, for example, can pack up all their buildings and move

them, something the English aren't going to do with a stone castle. During the roundtable I also got quick looks at the Chinese and Delhi Sultanate, the other two confirmed civilisations.

"So much time has passed and other strategy games have evolved and iterated how RTS works," said franchise creative director Adam Isgreen. He pointed to some major additions in *Age 4*, like units being able to hide in forests to pull off ambushes and wall combat that makes city assaults feel suitably dramatic.

NEW AGE

After spending much of the last decade playing games in the *Total War* series, though, *Age of Empires 4* still looks like a throwback to me. A unit of pikemen looks like three men instead of one hundred, and cavalry seem to gallop up to an infantry line instead of crushing through it in a realistic show of physics. *Total War's* combat definitely leans towards simulation, but outside of battles it's missing most of what makes *Age of Empires* so fun: creating a city building-by-building and encircling it with an immense wall, or sending scouts into enemy camps to torment their peasants.

The asymmetry between civilisations tantalises me the most.

Civs will get bonuses for building cities and landmarks on top of tweaks to systems like trade, research, and production. And then there are the unique features and units, like the Sultanate's war elephants. Where the English are meant to be cozy and familiar, the Mongols and some yet-to-be-named Civs "really push the boundaries of what *Age of Empires* has done before," said Isgreen.

Age of Empires 4's four planned campaigns also sound ambitious: instead of focusing on individual historical figures they'll tackle a longer view of the civilisation's history. The Norman campaign begins with William the Conqueror, then moves to the conflict between his children Henry I and Robert II, and then their children, through to the signing of the Magna Carta a century later.

Four years after it was announced, *Age of Empires 4* is finally out in autumn 2021, but it should be playable sooner – a closed beta is on the way before launch.

Wes Fenlon



THE TERRAIN IS GORGEOUS AND TAKES FULL ADVANTAGE OF BEING 3D



NEED TO KNOW

RELEASE
September 16

DEVELOPER
Anshar Studios

PUBLISHER
In-house

LINK
gamedec.com

GAMEDEC

Solve crimes as a virtual Sherlock Holmes

This isometric RPG has a neat premise. You're a private detective solving cases in virtual worlds. A game detective, if you will. You know, a... *gamedec*? It's a terrible name, but the concept of diving into simulated worlds and solving crimes is a strong one.

Set in Warsaw in the 22nd century, virtual reality has become so convincing that people rarely spend time in the increasingly grim, dystopian real world. And who can blame them? In this dark cyberpunk future, life sucks, which has contributed to the sheer popularity of VR.

But the problem with spending all day hanging out in virtual worlds where there are no real consequences is that it tends to bring out the worst in humanity. I mean, play any popular online game today for more than ten minutes and this isn't hard to imagine.

As a result, crime has become an issue, to the point where cybercops like you have to be brought in. You create your own detective, using abilities and professions to determine what kind of super sleuth you'll be.

Some of the crimes you investigate happen on the rain-soaked streets of Warsaw, but you'll also be able to venture into virtual worlds too. These include a seedy 21st century city where people role-play, *GTA*-style, as criminals.

I played a demo of *Gamedec*, set in a tiny, closed off crime scene somewhere in the depths of Neo Warsaw. It presents only a minuscule fraction of what the final

game will offer, with a lot of dialogue options, decisions and menus locked off.

But I did get a bit of a taste of the game's detective systems. A man with a pair of holographic bat wings is lying dead on the rain-slicked pavement, seemingly shot out of the sky by an automated drone the city uses to kill vermin.

Refreshingly, there's no combat in *Gamedec* – although you can still die, albeit temporarily until whichever VR world you're in respawns you. This is a game about conversations, investigation, and piecing together clues to paint a picture of the truth.

FULL DEC

I get a sense of this as I explore the crime scene, interrogating witnesses, hacking CCTV cameras and drones, and using my detective skills – in the form of classic RPG skill rolls – to root out hidden clues. These clues are then added to a codex that you can access, linking them together to make deductions. You're given several conclusions, and must create a path towards the correct one (or what you *think* is the correct one) by linking clues to it.

As I explore the crime scene I learn a few things that add weight to the theory that the victim was shot down by one of those anti-vermin drones. Apparently giant fruit bats are a problem in this future Warsaw, and it seems the drone may have mistaken the dead man for one as he fell from above with those wings on. But there are other clues suggesting it might actually be a murder. The best detective stories throw up a lot of intriguing questions, and *Gamedec* does a decent job of making me want to find answers to them.

As a fan of detective games, in theory I should be pretty excited about *Gamedec*. But I'm not there yet. The investigation mechanics are sound, but the writing is not great. It feels flat and amateurish, and the future slang ('gamedec' being a prime example) comes across very forced.

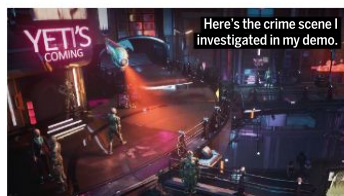
Of course, for any detective game, it all really boils down to the quality of the cases. If Anshar can create compelling mysteries with satisfying solutions, it might just make up for the game's other shortcomings. I guess we'll find out when the game is released on September 16.

Andy Kelly

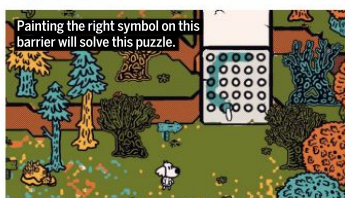


The people lying in these pods are dead to the world in VR.

APPARENTLY GIANT FRUIT BATS ARE A PROBLEM IN THIS FUTURE WARSAW



Chicory: A Colorful Tale





NEED TO KNOW

RELEASE
Spring 2021DEVELOPER
Greg LobanovPUBLISHER
FinjiLINK
chicorygame.com

CHICORY: A COLORFUL TALE

An adventure that encourages you to paint outside the lines

Iwould describe my colouring style in *Chicory* as a chaotic, turbulent scrawl. I have zero time for staying within the lines, switching up colours as fast as I can on the fly. *Chicory* may be a game about colouring in, but its willingness to let players draw freestyle is what really makes it shine.

It's a whimsical adventure game where you play as an adorable beagle named after your favourite food – which for me was pancakes – who possesses a magical paintbrush that lets you colour in the environment around them.

As cool as having a giant magical paintbrush is, you're only borrowing it, and the brush's true master is the titular Chicory, who is currently missing. Not only that, but *Chicory* seems to have taken all the colours of the world with her, so you're tasked with finding out where she is and restoring colours to the world with your newly acquired painting prowess.

The best thing about *Chicory* is, unsurprisingly, the colouring, and you can directly draw onto the game's black and white backdrop. The painting mechanic is used in a lot of thoughtful ways throughout the game. You'll be using the brush's many abilities to solve puzzles, navigate tricky platforming areas, and even use it as a weapon in boss fights.

Chicory sounds like an adventure game through and through, but developer Greg Lobanov says that it also has a lot in common with life sims. "You can play

Chicory like an adventure game where you solve puzzles and see the ending and be happily done," Lobanov says. "But, some people are going to forget that the game even has an ending and just wander around decorating, finding furniture and chatting to all the characters."

Similar to other life sims, you can take your time helping character's out with their requests, collecting items, and exploring the world. You can colour within the lines of the world, or completely freehand it and have the freedom to scrawl wherever you like.

"A really cool benefit of the painting mechanic is that when you come to a brand-new screen, you always know you haven't been there before, because it's black and white," Lobanov says. "It's the same for areas you've already visited, you always know you've been there because it's coloured in or you have drawings on it."

Folks who are concerned about the accessibility of using colours as game mechanics have nothing to be worried about. "None of the puzzles use colour as a mechanic," Lobanov says. "There's no puzzle asking you to paint things in specific colours, so if you're colour blind or have a colour vision deficiency, it doesn't matter."

FIRST LOOK

PICTURE PERFECT

So far, *Chicory* sounds like a lovely walk in a scribbled-in purple park, but the game also touches upon serious themes too. A big part of the game is the relationship between your character and Chicory. She's a famous artist and you're her number-one fan, so how that relationship develops is a central aspect of the game.

"I care a lot about being genuine," Lobanov says. "It deals with themes like imposter syndrome, anxiety, and being a creative person in general. It's also about how being creative interacts with ideas of status and fan-creator relationships."

Lobanov's last project, *Wandersong*, was about a bard trying to save the world, but *Chicory*'s themes are more intimate which is something he hopes will strike a chord. "I'm keen to learn about how people are going to relate to it," Lobanov says. "I feel that with *Wandersong*, the stakes are so big and obvious, but in *Chicory* it is much more personal."

Rachel Watts



THE PAINTING MECHANIC IS USED IN A LOT OF THOUGHTFUL WAYS THROUGHOUT THE GAME

PREVIEW

A Musical Story



HUNTING GAME

The rhythm gameplay is (so far, at least) very simple and, while skill is required, you're essentially just slowly unlocking a story piece by piece. "Is it a game?" Yes.

HIMI JENDRIX

Actually, his name's Gabriel (apparently). The band is his escape from a monotonous job, and maybe – just maybe – his door to fame and fortune. Yet it somehow leads to hospital...

A MUSICAL STORY

PLAYED IT

Are You Experienced (in the ways of the rhythm game)?

NEED TO KNOW

RELEASE
2021

DEVELOPER
Glee-Cheese Studio

PUBLISHER
Digerati

LINK
bit.ly/3mbbtMN

The wonderfully named Glee-Cheese Studio has its sights set high here. It's a rhythm game, sure – tap buttons in time to the music, occasionally hold one down, you know how it goes – but one with a narrative focus. You see, correctly synching button taps with the music sparks a brief flashback.

Music sparks memories as the main character of *A Musical Story*, Gabriel, tries to remember how he ended up in a hospital bed. The soundtrack is *fantastic*, a diverse and 1970s-appropriate collection of lo-fi beats and casual, psychedelic riffs that let notes ring. If nothing else, your ears are in for a real treat, man.

Luke Kemp

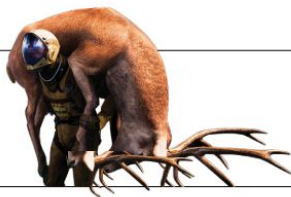
**BEAT
IT**

Each set of notes must be matched perfectly to progress. If you need to repeat the process, you'll find that riffs have been carefully chosen for repetition to sound natural.

**FEELING
IT**

Although genre tradition dictates that the rhythm icons be presented horizontally, here they're given in a circle. The aim is for players to match beats by ear rather than eye.

**CORRECTLY SYNCHING
BUTTON TAPS WITH THE MUSIC
SPARKS A BRIEF FLASHBACK**



Storms aren't just for atmosphere.

NEED TO KNOW

RELEASE
TBC

DEVELOPER
RocketWerkz

PUBLISHER
In-house

LINK
surviveicarus.com

ICARUS

Battling a hostile planet in Dean Hall's next survival game

Dean Hall is on fire. That's not a metaphor – his character is engulfed in flames. As Hall runs around looking for water I quickly craft a long-handled tool called a 'fire whacker' which is basically a broom. Another player and I whomp Hall repeatedly with our brooms trying to smother the flames.

Hall collapses and I stare down at his corpse, wondering if we've just beaten him to death while trying to save him. "I think I burnt to death, actually," says Hall as he respawns. He explains that in *Icarus* small fires can quickly grow out of control and become full-on forest fires. "We should probably get away from here," he adds, as several more small fires begin to smoulder near the trees.

Forest fires are just one of the many hazards in *Icarus*, the co-op survival game in development by RocketWerkz, the New Zealand-based studio Hall founded after leaving Bohemia Interactive (and DayZ) in 2014. As Hall describes it to me, in *Icarus* it's "you against the planet". I definitely got that feeling in the hour I spent playing.

HALL PASS

Hall's team has already built several small bases stocked with supplies and equipment on *Icarus* (the planet) by the time I log in for my session. *Icarus* is in the midst of a storm and many of the structures Hall's team built have already been partially destroyed by falling trees and lightning strikes. The weather in

Icarus isn't just for show, it can mess up your mission and threaten your life.

As the storm lifts and the sun begins to shine, Hall walks me through the familiar early paces of the survival game. I collect sticks and stones from the ground and craft a stone axe and a pickaxe. As with my fire-whacking broom, it feels a bit strange to be using primitive stone tools considering I'm a spaceman. But this is just the first step of being a prospector. You arrive with nothing, but once you've mined valuable resources from *Icarus*, you'll be able to take them back up into orbit and start buying and crafting more advanced equipment.

Wildlife abounds, and Hall takes me deer hunting with bows and arrows, where I take down a buck with a single bowshot. We also fend off a wolf attack near the cabin. Animals will visit lakes and rivers when thirsty, look for food when hungry, and react to weather events, getting "freaked out" by storms, as Hall puts it.

While the session-based aspect of *Icarus* feels pretty novel to me, the crafting system is more traditional. As you play you gain XP (as well as earning the shared XP of your teammates), and these character levels give you access to higher tiers of crafting recipes, unlockable by spending points. At higher levels on the tech

tree I can see advanced armour, camouflage, fishing gear, weapons like rifles and shotguns, and items like binoculars and a fire extinguisher.

Near the end of my session I craft a little cabin of my own using the intuitive building system with snappable pieces (similar to *Rust* or *Fallout 4*) and lots of attractive wooden beams (*Valheim* vibes). My cabin winds up looking like a basic box but the one RocketWerkz built looks more like a ski chalet, suitable for relaxing after a long day of deer hunting and bear attacks.

It's only a very small slice of *Icarus* I got to experience, and I didn't even get to see the portion of the game that takes place on the space station. But I'm still eager to go back for more. Hall says *Icarus* is playable solo, too, though it seems like it'd be extra difficult to survive without a friend close by to fend off bears with a shotgun and whack you with a broom when you catch on fire.

Christopher Livingston



Build cozy (but temporary) cabins.

I CRAFT A LITTLE CABIN OF MY OWN USING THE INTUITIVE BUILDING SYSTEM





Grit supports squads, duos, and lone wolf cowboys.

NEED TO KNOW

RELEASE
Spring 2021 (Early Access)

DEVELOPER
Team Grit

PUBLISHER
In-house

LINK
grit.gg

GRIT

Big ideas for big sky country in this cowboy battle royale

Name your favourite scene in a western and the developers of *Grit* almost certainly have an idea for it. “The thing that really sealed the western theme for me is when we got horse combat working well,” says co-creator Bob Berry. “I was like, this isn’t just *PUBG* in the West anymore. It feels like a very different game now, and it’s fun.”

In some ways *Grit*’s unabashedly familiar. One hundred cowboys parachute out of a zeppelin (their parachutes look like cloth wagon covers out of *The Oregon Trail*) and loot their way across a giant map while a dust storm circles them. But the idea is that it’s a western first and foremost. You can have a high noon-style duel – when you die, you can shoot it out with one other cowboy to get back in the game. If you want to ride a horse up to a train and take it over, you can do that. Tracks crisscross the map, and trains will even provide some shelter from the closing circle. Stetsons serve as head armour and stove doors protect your body from hot lead. “How cowboy is this?” was the key design question for everything added to *Grit*, co-creator Jon Mavor says.

PLAYING IT STRAIGHT

Even poker’s a big part of *Grit*, though you won’t be sitting down to play a hand. Loot is built around collecting playing cards that represent different weapons. Put together a flush to earn a perk that sets you apart from the average cowpoke. It’s a

PLAYED
IT

much better fit for 19th century weapons than the usual battle royale looting.

“They aren’t known for having rails on them where you attach your laser pointers,” joked Mavor. “When you’re looking for a weapon, yeah, I want the ace, but if the ace is the wrong suit, I might take the king or jack or something else to maintain my perk. When you’re looking throughout the game it puts more of an emphasis on the hands that you want... and it extends that loop of looting to be more interesting.”

Grit ran a short network test in early April, but its real release on Steam Early Access won’t come until later in the year. Right now it’s rough. The Unreal Engine 4 map looked a bit splotchy and barren and ran poorly on my i7-7700K and RTX 3070. But the developer stressed that it was a beta test for getting performance data. There’s still lots of polish to do and piles of features to be added.

Grit’s strengths do prove how fun a western battle royale could be, though. I liked a few of its smaller touches. Firing *Grit*’s weapons emits big puffs of smoke, serving as a glaring indicator of where you are. It’s a nice, natural way to trace whoever’s shooting at you. The same goes for horses: ride at full speed and your horse kicks up a dust cloud that’s visible from far away. Slow down to a trot and that cloud dissipates, letting you travel a bit more stealthily. It sounds good, too. Shotguns really roar, and you can hear horses galloping through canyons from far away. Horses control like stiff automatons, but trying to shoot from one – or shoot someone off of one – is a fresh battle royale challenge. You can also expect some sort of meta progression. The details are still in the planning phase, but *Grit* will probably use the season pass model.

“We have a million different game mechanic ideas that we want to try and a team that can move very fast,” Berry says. “It’s not just about how many hats we can put out per month... right now we’re way more interested in what cool mechanics we can bring to the game, and we’ll try it with the players and get feedback on what’s working and what’s not. I think the game will feel alive because our updates will come fast and frequent.”

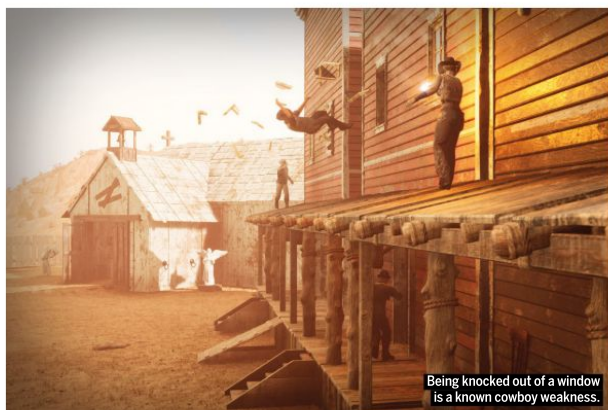
Wes Fenlon



The huge map ranges from desert to (literal) greener pastures.



STETSONS SERVE AS HEAD
ARMOUR AND STOVE DOORS
PROTECT YOUR BODY



Being knocked out of a window is a known cowboy weakness.



There's always that one friend who tries to showboat. Showchute?

Fights in Tight Spaces

Armoured enemies can regenerate their defences every turn.



Some spaces offer almost no room to evade attacks.



You brought a gun to a spinning kick fight.





NEED TO KNOW

EXPECT TO PAY
\$19.50

DEVELOPER
Ground Shatter

PUBLISHER
Mode 7

LINK
bit.ly/31xCF18

FIGHTS IN TIGHT SPACES

A lack of clarity means these tight spaces have room to grow

Wearing its inspirations with confidence, *Fights in Tight Spaces* riffs on classic movie hallway fight scenes, capturing much of the scrapping and dirty tactics that make those close-quarters brawls so electric. But despite the clean choreography, it's the less apparent influences that force a stumble.

Immaculately-dressed and with a snappy retort always on hand, Agent 11 would be a serviceable stand-in for James Bond or John Wick. But rather than give you the whole movie, *Fights in Tight Spaces* wants to focus on the real action – the scenes where the hero is hopelessly outnumbered with nowhere to run. In attempts to break up crime rings run by Scandinavian bikers, well-dressed Mafiosi, or German ninjas, you're placed into subway cars, prison cells, and dive bar bathrooms, and tasked with fighting your way out against seemingly insurmountable odds.

Developer Ground Shatter has clearly done its cinematic homework. The requisite agility and power is clear in every nimble dodge or meaty punch, and the stakes of each encounter are apparent despite the turn-based format – a single wasted movement can be the difference between victory and a bullet in the back. It's at its best when it's letting you manipulate a crowded scene, slipping out of danger before pushing an opponent into the line of fire, capturing the combative mastery of even the most seasoned action frontmen in a way I've not

felt since *Superhot*, with a colour scheme that can't just be a coincidence.

A decades-long cinematic legacy helps establish a flawlessly-executed theme, but other inspirations come from some more unexpected sources. Every tight space is divided up into a grid system, with enemies signposting their upcoming attacks in a manner reminiscent of *Into the Breach*, while Agent 11's own abilities are defined by a deck of cards which is drawn from every turn. Different decks allow for different styles – all-guns blazing or sly and slippery, although I've found the basic set of cards most effective – and start out simple but can be upgraded with more complex moves over time, while every action you take is defined by a mana-style 'momentum' cost. The influence of roguelike deckbuilders like *Monster Train* and *Slay the Spire* is clear.

CLAUSTROPHOBIC

The brawny setting might seem at odds with the exhaustive mental search for the optimal strategy that these mechanical inspirations promote. When you're backed into a corner with nowhere to go, however,

you begin to realise how successful a combination this is. But *Fights in Tight Spaces* falls down on the one aspect most crucial to the genre's success: visual and mechanical clarity. An isometric perspective and opponents who are similar shades of the same colour means it can be easy to misread a situation. A lack of information means I've tried to bait enemies into an intricate series of attacks on each other, only to lose my gamble on which gunman would fire the first shot and take a series of game-ending hits. In my first attempt at a late-game bossfight, my entire campaign was almost derailed by an unclear tooltip that meant I was taking big chunks of damage that I thought I was dealing out instead.

Fights in Tight Spaces leans on a lot of different ideas, blending them together into a final product that pays excellent homage to its themes, but stumbles over its execution. These current failings are far from a deal-breaker in Early Access, but are an unfortunate distraction, turning an otherwise effortlessly cool power fantasy into a frustrating head-scratcher.

Alistair Jones

DEVELOPER GROUND SHATTER HAS CLEARLY DONE ITS CINEMATIC HOMEWORK

Throwing a goon out of bounds is an instant KO.



NEED TO KNOW

EXPECT TO PAY
£11.40

DEVELOPER
BenStar

PUBLISHER
Dear Villagers

LINK
bit.ly/3tU4kDu

REVITA

Much more enjoyable than a rye-based crispbread

Grab your controller, and prepare yourself for a roguelike you'll be happy to have kill you again and again. 2D platforming and twinstick shooting ensure that it's very much pick-up-and-play, which is just as well as you've only got four hearts and a fairly weedy, short-range gun.

As you start off so underpowered, pickups are vital to making it through to the end. While enemies will occasionally drop goodies, you're going to have to *buy* most of your items – with health points. Whether you're sacrificing hearts at an altar, making a purchase at a shop, or buying your way into a chest, it's going to cost you precious health. *Revita* is a constant balancing act between confidence in your abilities, and how well (or how badly) any particular run is going.

Levels are presented as floors reached via an elevator, and each is just one or two screens big. This keeps the game fast-paced, and the action tense. Some enemies will slowly chase you down, and most spew bullets. With little room to move around in, the brief invincibility afforded by your dash is a literal lifesaver.

At time of writing, there are just three sets of floors, and I find myself saddened when I reach the end for the first time. I want to keep playing! So I do. There's already a huge amount of items to unlock, and BenStar is making regular additions and tweaks to the game. *Revita* has a bright future ahead of it.

Luke Kemp

THE BRIEF INVINCIBILITY AFFORDED BY YOUR DASH IS A LITERAL LIFESAVER

1 Despite being an Early Access title developed by just one person, *Revita* has a list of accessibility options that puts many studios to shame. Sprites can be outlined in a variety of colours, game speed can be adjusted, pixelated text can be swapped out for a HD font, and more.

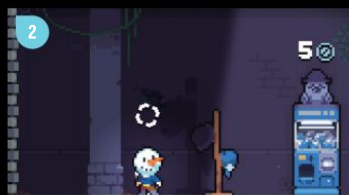
2 In what is quite frankly a stroke of genius, a gachapon machine can be unlocked in the hub once the tower has been cleared. For the reasonable price of five soul coins (earned through runs), your character can unlock one of many hats to proudly wear.

3 A small number of buffs will be cursed or – in very, very rare instances – blessed, with an additional debuff or buff included accordingly. If you're underpowered when you reach a boss, a special chest will appear, which can be opened for free but guarantees a cursed item.

4 Going on a journey is a theme throughout (stations, trains, elevators), and the three bosses available at time of writing are, in order, named after the first three originally identified stages of grief (denial, anger and bargaining).

5 Each room is over with quickly, one way or another. Even if you take advantage of the option to slice damage dealt by enemies in half, each mistake made is felt keenly as your health is chipped away. Conversely, expertly clearing a room in seconds is immensely satisfying.

6 There is, for now at least, not really anything in the way of permanent character buffs. Instead, unlocks centre around adding new items and even new room types to the tower. Soul torches for example give you a few extra souls, which you collect for a chance to heal a little.









ALIVE & KICKING

Playing my first match in **BLOOD BOWL 3**
– and surviving to tell the tale.

By Jody Macgregor

Blood Bowl 3



ames Workshop gave up on *Blood Bowl* for a long time. A fantasy football game for teams of 11 to 16, it was never going to move as many miniatures as wargames you have to buy entire armies for.

An official player committee was given the task of updating its living rulebook, which they did until 2009, when Cyanide released its first videogame version and essentially became the custodians of *Blood Bowl*. Cyanide organised tournaments online, created new teams like the heavily armoured Bretonnians and acrobatic bear-taming Kislev Circus, and helped keep *Blood Bowl* alive.

Today, Games Workshop is a different company, one with more time for hobbyist board games. The tabletop version of *Blood Bowl* was resurrected in 2016, and the rules

overhauled in Second Season in 2020. Cyanide's videogames, once at the cutting edge, are now behind the ball, two editions out of date.

I GET KNOCKED DOWN

But not for long. While the board game fans have nicknamed *Blood Bowl* 2020 was being designed, Cyanide was consulting on the rules in preparation for eventually digitising them in *Blood Bowl* 3. "Their knowledge and passion for *Blood Bowl* is phenomenal," says Owen Rees, head of videogame licensing at Games Workshop, "and indeed sometimes in the past their questions whilst coding the game have helped us refine our FAQs. Outside of Games Workshop they are probably the foremost experts on the game!"

Basile Bastian, lead game designer at Cyanide, confirms the close relationship. "I remember the first draft," he says, "there was a lot of differences with the previous set of rules, and we give feedback. 'This rule is a little bit strange because it says quite the opposite ten pages after'. They help us and we help them to improve also. So that was a nice exchange."

To demonstrate the changes in *Blood Bowl* 3, Bastian has set up an online match in the current build, several months ahead of its planned August release. We're both playing new teams, him the Imperial Nobility (humans in fancy armour, loosely

IT'S FIVE MINUTES
INTO THE
MATCH AND
ALREADY WE'RE
LAUGHING





ABOVE: Play the ball, not the orc.

LEFT: The emote wheel lets you display emotion without having to use your human voice.

replacing the Bretonnians), and me the Black Orcs (ores with a little more skill than the regular kind, backed by goblins to do most of the fiddly ball-carrying).

On the first turn I make a safe move, which is to say I hit someone smaller than me. I pick a humie player with no friends around, and execute a block on him — rolling two dice and choosing the most favourable since I'm stronger. Each comes up with the same result: Both Down. That would normally mean both players take a fall, except he's got the Block skill which prevents Both Down results from applying to him. I elect to reroll, and get the exact same result. My orc hits the deck, and it's an immediate turnover. A perfect first turn for my first game of *Blood Bowl 3*.

So yes, *Blood Bowl 3* is still the same *Blood Bowl* in spite of any changes: a game that encourages you to prioritise actions with the least chance of failing, yet will still sometimes slap you in the face because the dice are nobody's friend.

Personally, I love the randomness. It's five minutes into the match and already we're laughing, as we will be again when Bastian commits a foul on one of my players (making the PR guy quietly watching us chide

LEAGUE LEGENDS

Star players are cheaper now. So let's get to know a few of them



MORG 'N' THORG

Ogre with lots of trophies, including a medal for Services to Organ Transplants.



HAKFLEM SKUTTLESPIKE

Two-headed, four-armed skaven with the most Warhammer-y name ever.



GLORIEL SUMMERBLOOM

Elf thrower who's nice to people and believes in following the rules, which makes her a rarity.



KARLA VON KILL

Human, former pig farmer, runner up for most Warhammer-y name ever.



ZOLCATH THE ZOAT

Zoats are like if a centaur was green, six-legged, reptilian, and basically just not a centaur.

him for not going easy on me), and again when I push one of his players into the rabid crowd to be pummelled into unconsciousness, and again when one of my goblins scores a touchdown against the odds.

WE ARE THE CHAMPIONS

Though everything that makes it *Blood Bowl* remains in place, the rules have changed in plenty of ways. For instance, my troll has a new skill called projectile vomit, which I use to puke stomach acid all over Bastian's ogre. Everyone has the ability to jump over prone players, adding a little mobility. And you can use more than one reroll each turn.

Rerolls are a precious commodity. You have to put a lot of thought into committing more than one to a single manoeuvre. "Is it a good move?" asks Bastian. "Depends on the situation, of course, but it gives more elasticity to the system. I think it is a good thing for new players."

I've only got two rerolls per half, and if I use both in a single play it had better be for something worthwhile. A complicated multi-step play, for instance like having the troll pick up the goblin with the ball, first passing a Stupidity check as he has to before doing anything, then passing an Always Hungry

MY TROLL PUKES STOMACH ACID ALL OVER BASTIAN'S OGRE

◆ check to not eat the goblin, then a Passing test to accurately hurl the tiny doofus, who has to beat another roll just to survive the landing so he can scurry over the line.

That's four rolls in a row. More if the goblin has to dodge out of tackle zones after landing or sprint to go an extra square or two. It's not the kind of thing a team like the Black Orcs will try often when safer plays — like hitting people — are available. When the other team's down and bleeding, then we'll remember about goals and think about walking one in.

Other teams, those of the agile-and-fragile variety, need to spit in the face of probability on the

regular. A simple change like being able to spend more than one reroll per turn could significantly change how they're played, making hairy risks more common. "Especially during the last turns of a drive," says Bastian, "I think it will occur during those kind of moments."

Other new rules bring a little more balance to Blood Bowl, though in typically chaotic ways. Teams with a lower value, perhaps because they've lost a few players to a bashy opponent in a previous game, can roll for 'Prayers to Nuffle' — the god of football violence whose name is 'NFL' as pronounced by someone who gets hit in the head for a living. Nuffle

ABOVE: The troll can use a vomit attack, or just punch dudes.

FAR RIGHT: Player cards now show Agility and Passing (a new stat) as the numbers you have to roll over.

might open trapdoors on the pitch, grease someone's boots, or help you sneak a knife onto the field.

Special Play cards, fondly remembered from the board game's 1990s version, have returned to the tabletop game with similar effect. They're inducements available pre-match, when you're bribing the referee and hiring an extra healer. They let you draw from decks full of dirty tricks like "Look, a Distraction!" and magic items like Agrablag's Ball of Pain. Only some of them will be in *Blood Bowl 3*, Bastian tells me. "We have a bunch of special play cards for the launch of the game, not all of them directly at launch," he says.

BOWLED OVER *There have been more than three Blood Bowl videogames, but who's counting?*



BLOOD BOWL 1995
Published by MicroLeague. No way of telling players apart by looking at them. Largely forgotten.



CHAOS LEAGUE 2004
Cyanide's unlicensed game was so close to *Blood Bowl* Games Workshop took them to court.



BLOOD BOWL 2009
One amicable out-of-court settlement later, Cyanide was given a shot at an official videogame.



BLOOD BOWL: LEGENDARY EDITION 2010
Same game, but with more stadiums and teams.



BLOOD BOWL: CHAOS EDITION 2012
The same game again, but with more Chaos teams.



DUNGEON BOWL 2012
An expandalone with matches played in tunnels, which were a bit restrictive for football.



BLOOD BOWL 2 2015
Cyanide's sequel was less clunky, but also less complete, with new teams added as DLC.



DEATH ZONE 2018
A real-time *Blood Bowl* spin-off, so unpopular it was folded into *Blood Bowl 2* as free content.

Fingers crossed the Mutated Balls card makes it in.

THE BEAUTIFUL GAME

Though *Blood Bowl 2* looked nice enough, it had its limitations. Crowds made up of the same four people, smeared ground textures, a lack of variety in player models – not the kind of things that ruin a turn-based sports game, but very noticeable after some time.

Blood Bowl 3 may not have crowds of unique individuals in the stands, but it does a better job disguising that with waving pennants, extra statuary, cooking fires, and water features placed around the stadium. There's even a camera goblin balancing on a barrel in the pond.

We're playing on the Imperial Nobility's home ground, rough grey astrogranite that highlights spilled blood nicely, one of 12 pitches ("some of them with new game rules") in *Blood Bowl 3*.

The players look a little less copy-pasted. My orcs have different arrays of tusks attached to their faces and patterns on their shoulderpads, and while one of my goblins wears knuckledusters and a beaky helmet, another has spiked elbow pads and a faceguard impressively shaped like a toothy metal mouth. "We have improved the visuals," Bastian says, "we based our artistic vision on the figurines."

More customisation options help with that. An orc doesn't just get to

choose from a handful of preset heads, but from separate helmets, shoulder pads, body armour, arm guards (left and right separately), and an overall level of spiky bits, as well as different colours for each. It's closer to painting a miniature, without having to worry about mucking up the eyes.

THERE WILL BE BLOOD

Your personalised designs get highlighted in snappy cinematics where you see your perfect beautiful creation get slammed into the ground by an ogre. They've been abbreviated from the overlong cinematics in *Blood Bowl 2*, but I recognise the Noble Blitzers using the same attack the Bretonnian Blitzers used to.

"We created a new bunch of animations, especially for the new factions," Bastian says, "and others are reused from the previous ones. We kept the best ones from *Blood Bowl 2*." I'm not sure this sideways uppercut is one I'd keep, but perhaps I'm salty because I'm watching it lift my guy into the air.

All this is overseen by a coach, now represented next to the dugout. Bastian's coach is wearing an elaborate winged headpiece, mine has half a dead ghoul nailed to his shoulder. The coaches also appear in pop-ups when you choose an emote, of which there are six: despair, celebration, incitement, tease, kill us, and explosion. Six perfectly normal emotional responses. I'm feeling a bit



Blood Bowl 3

✦ explosion today. The coaches aren't just for show, though. "If the foul action is made and the referee has seen it you can try to use the coach to tell him no," Bastian explains. There's a chance your coach's argument will earn your player a reprieve. Bastian helpfully demonstrates this system by kicking a half-dead goblin while it's down.

There's space for assistant coaches and cheerleaders on the sides of the field as well. "Each faction has its own cheerleader," Bastian says, "visually different, and the dances are different. It was a huge request from the community because it was the case in *Blood Bowl 1*, but not in *Blood Bowl 2*."

Of the handful of cheerleader options in *Blood Bowl 2*, the orcs with weighted nipple tassels were difficult to forget about. Cyanide has to run its designs by Games Workshop to get validated and were surprised to receive a yes on that one, so I'm told they've submitted some wild designs for *Blood Bowl 3*.

SPLATTERMANIA

The tabletop return of *Blood Bowl* was bittersweet for people who got into it immediately before lockdown. "Unlike the tabletop version the digital version obviously allows for players to play with people they're not physically with," says Rees. "Also it brings in new players who may not be aware of the tabletop version so we see it as complimentary for those

that love the tabletop version, rather than an alternative."

For those who prefer a singleplayer experience, *Blood Bowl 3* has a story campaign that won't force you to play vanilla humans like *Blood Bowl 2* did. "You can create a skaven team for example and play with this skaven team all the campaign," Bastian says. "Now the campaign is divided into chapters and each chapter is a specific competition, which has specific challenges to beat." Your custom team doesn't have to end their story there, either. "You can play the team you have created during all the campaign, and after that play the same team in multiplayer."

Sounds grand, but singleplayer won't count for much without an AI that puts up a bit of a fight, and the AI in *Blood Bowl 2* was a cakewalk even on hard difficulty mode, unless you handicapped yourself with a low-tier team. When I ask Bastian whether this will be improved he explains the AI is being programmed "to be more offensive than before, and it will try also to create some configurations with its players". He loses some of my confidence when the first configuration he mentions is a cage to protect the ball-carrier, something the AI already relies on too much in *Blood Bowl 2*, rarely passing or running even when there aren't enough turns left to score any other way.

**BLOOD BOWL 3 HAS
A STORY CAMPAIGN
THAT WON'T FORCE
YOU TO PLAY
VANILLA HUMANS**





OVER THE YEARS *A timeline of the different versions of Blood Bowl*



1986
1st edition.
Adapted from
Warhammer
Fantasy Battle – a
skirmish wargame
with a ball.



1988
2nd edition.
Introduced
Dungeonbowl, an
underground
version of the
sport.



1991
Kerrunch. A
spin-off aimed at
beginners, with
simpler rules



1994
Third edition.
Introduced the
turnover rule,
became
recognisably
Blood Bowl.



2001
Living rulebook. A
free PDF annually
updated, the rules
previous
videogames used.



2011
Blood Bowl: Team
Manager. A card
game – basically
Football Manager
with orcs.



2016
Blood Bowl 2016.
The rules didn't
change much, but
it was a board
game again.



2020
Blood Bowl
Second Season.
Rewrote the rules
to help new
players, nerfed
wood elves.

Bastian assures me that “near the end of a drive she will try to do more ... in order to complete a touchdown” and “she will be more aggressive about trying to do more fouls”, which would be an improvement.

Since I didn't get to try the singleplayer, I can only hope *Blood Bowl 3* can pit you against computer-controlled teams that know how to play it. Everything else Bastian says is encouraging. He explains that we'll be able to make leagues that mix player and AI teams, and decide whether players are allowed a pool of bonus turn time (another nice touch for beginners). The menus are being redesigned, and you'll be able to see

all your players and any competitions you're managing more easily.

A detail that matters to me: *Blood Bowl 3* lets you rename players at any time, not just when hired. I'm from the *XCOM* school of nominative reward, where they earn nicknames by living long enough to distinguish themselves, or die anonymous. The same applies to elves and goblins, whose survival odds are about the same as *XCOM* squaddies.

BUT I GET UP AGAIN

Surviving against the odds is what *Blood Bowl* is all about, and the game's production embodies its theme. The first edition in 1986 was

seemingly produced on a whim, and after the third edition Games Workshop abandoned it for 20 years. A game of *Blood Bowl* is full of surprises, but it's just as surprising the game still exists.

“In retrospect the idea of fantasy races playing a contemporary-style sports game was a crazy idea to have in the 1980s,” admits Rees, “but it clearly struck a chord and the cheeky irreverence but recognisable structure just work really well together. Who doesn't like a referee you can bribe, players with chainsaws, or an ogre throwing a goblin down the field to score a touchdown?” ■

TOP: The referee seems like a trustworthy sort. He's got an unbribable face.

FAR LEFT: They think it's all ogre...

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Free Stellaris soundtrack with your issue

Ten discs and counting of out-of-this-world music

Thanks to our good friends over at Paradox, this month we've got an intergalactic gift for you – the complete soundtrack for grand space strategy sim *Stellaris*. Enter the attached code on Steam and it'll be redeemed to your account, ready for you to listen to whenever you fancy feeling like the ruler of a sprawling alien empire.

The great thing about this soundtrack is that it not only includes all the lovely, atmospheric tunes created for the base game, it's also updated every time a DLC is released, adding in any new tracks. It's like a living album that'll keep growing over time, at no cost to you, lucky reader. And with all the expansions released so far, it's already up to ten discs of music – enough to keep you going until the heat death of the universe. Possibly.

That includes music from the latest expansion, *Nemesis*, which focuses on both espionage, allowing you to screw over other empires like never before, and new mechanics for endgame crises, where suddenly you realise you need them to all be your friends. Or not, actually, because this DLC also lets you *become* a crisis – turning your empire into an apocalyptic event in its own right, complete with a fleet of 'Star-Eater' ships that... well, do what they say on the tin.

Whether you embrace heroism or villainy, or just want something to listen to while you do the ironing, this album's got you covered.

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LET'S CRU

Meet the game makers determined to stop development from ruining lives.

By Jeremy Peel

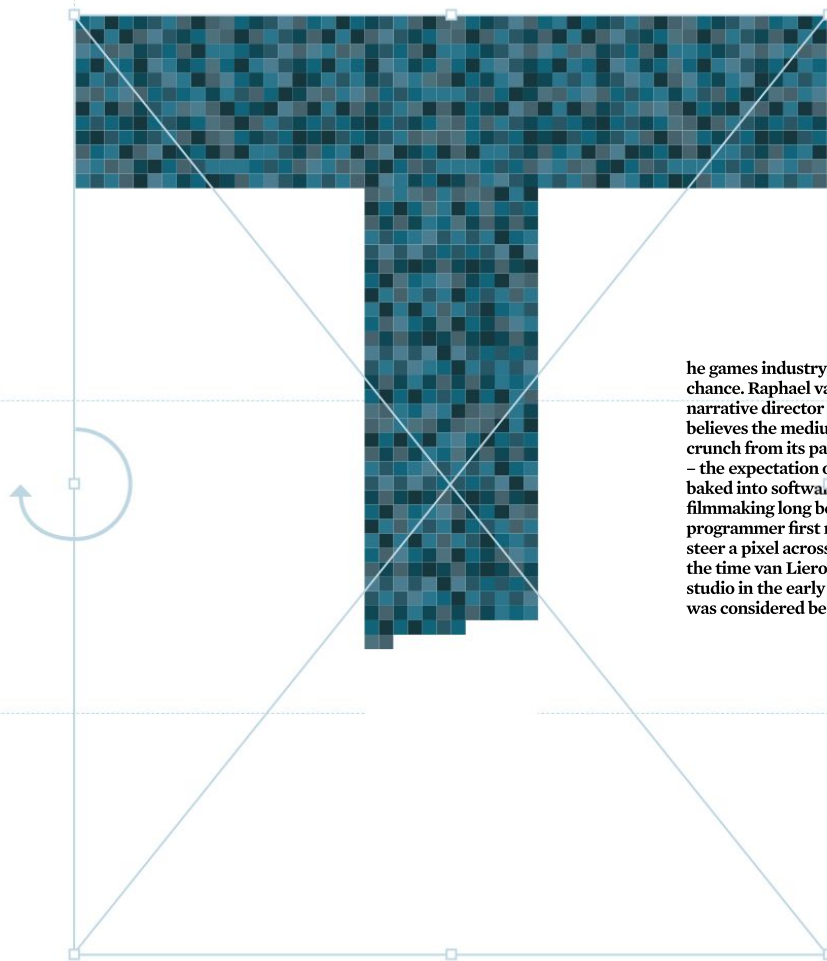
KILL NCH

Let's Kill Crunch



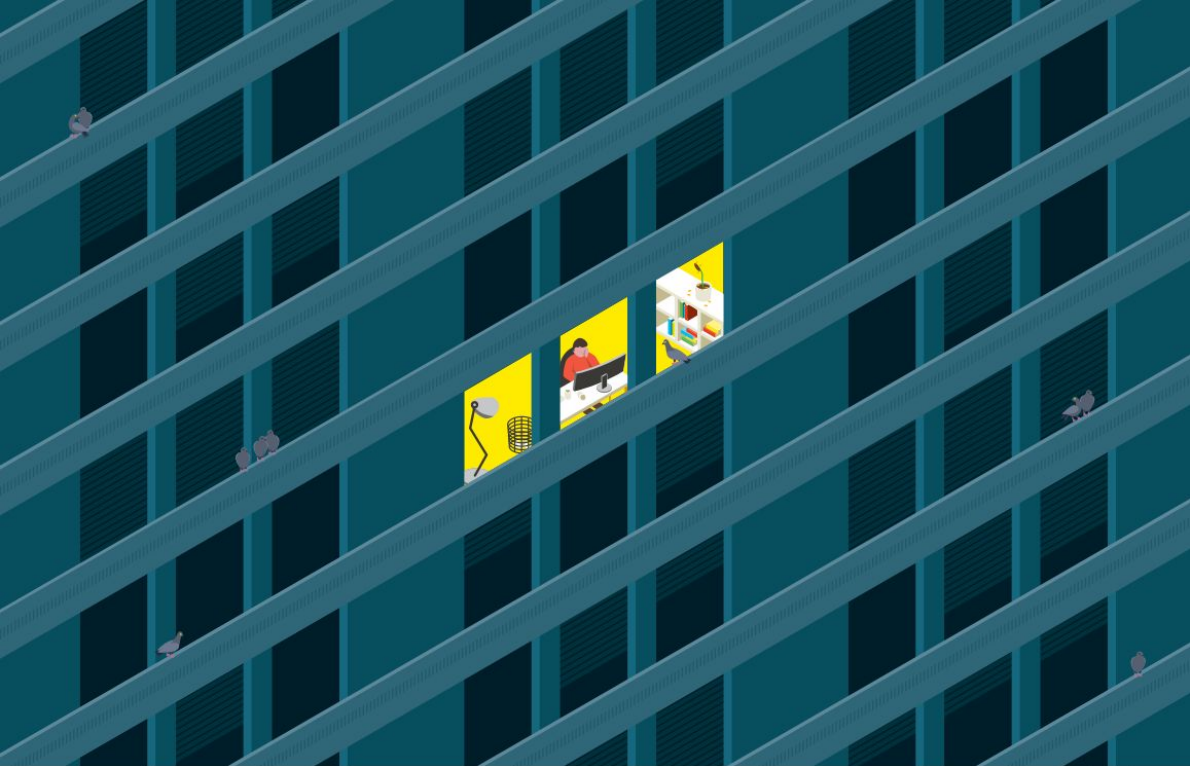
LEFT: Hinterland is only beholden to its players, "We're fortunate to have this."

RIGHT: Auroch has a long history with Games Workshop licences.



he games industry never stood a chance. Raphael van Lierop, narrative director of *Far Cry 3*, believes the medium inherited crunch from its parent industries – the expectation of overwork baked into software and filmmaking long before a programmer first managed to steer a pixel across a screen. By the time van Lierop joined a game studio in the early 2000s, burnout was considered best practice.

W: 133.429 MM
H: 166.056 MM



“We didn’t at all associate these things with poor management or poor planning practices,” van Lierop says. “We believed crunch was a necessary prerequisite to creating something exceptional.”

It was only after a dozen years of 70 to 80 hour weeks, as van Lierop found himself putting his kids to bed only to turn around and drive back to the office, that he recognised an unhealthy spiral. “I recall a night in particular during a really heavy crunch period, my wife looking over my shoulder and reflecting that she didn’t understand why I was making so many personal sacrifices for something that didn’t feel that much like ‘me,’” he says. “I realised I’d never stopped to ask myself if this

was something I’d wanted. Shortly after that game shipped I decided that I would never go back to another AAA studio, and Hinterland was largely born from that decision.”

Hinterland, which develops top-rated Steam survival game *The Long Dark*, is part of a new wave of studios dedicated to ending crunch. Though divided by continents, cultures and genres, they face shared problems – and offer a glimmer of hope that the rest of the industry can one day find similar solutions.

BAD ROMANCE

Overwork is not exclusive to AAA studios. Famously, *Stardew Valley* developer Eric Barone spent four years in self-imposed crunch –

HINTERLAND IS PART OF A NEW WAVE OF STUDIOS DEDICATED TO ENDING CRUNCH

TRIPLE VAY *The big-budget studios changing things for the better*



DOUBLE FINE

Tim Schafer has committed to finishing *Psychonauts 2* without crunch, and new owner Microsoft has backed him.



OBSIDIAN

“Death marches” are rare at the venerable RPG studio, which explains how it’s kept hold of its core of veteran staff for such a long time.



BUNGIE

Halo 2’s brutal development led the developer to change its ways. *Destiny 2* was made without enforced crunch, and holiday time is now mandatory.



LEFT: "It's just games," Nijman says. "Work shouldn't have to be like this."

RIGHT: AAA projects are complex, says van Lierop, and therefore mistakes have a high cost.



averaging ten hours a day, seven days a week. "We still really romanticise the solo dev working in their basement for years who shipped a huge hit," van Lierop says. "The games press plays a big role in this. The issue is that for every single indie hit that was made under those extreme conditions, 100 or 1,000 failed miserably and those developers ruined their health, their finances, and their relationships chasing a false dream."

For Vlambeer, the two-man team behind *Nuclear Throne* and *Luftrausers*, the dream was realised – but designer Jan Willem Nijman nonetheless regrets the damage done during the process.

"I burnt out a few times," he says. "The launch of *Nuclear Throne* was a major one. Recovery means not working for an extended period of time, being a barely functioning human, and then many months, if not years, to slowly get back to normal. On top of that, I lost some of my 'elasticity' – I can't push myself remotely as far anymore without quickly burning out again."

More recently, during the development of *Minit* and *Disc Room* – two critically-acclaimed games Nijman made with a variety of collaborators for Devolver Digital – he took care to prioritise life over work. "If it needs more time, it needs more time," he says. "If it means that the game needs to be a bit smaller, that's also fine. For us, making things

"FOR US, MAKING THINGS LEISURELY IS JUST AS FAST AS MAKING THEM UNDER STRESS"

leisurely is just as fast as making them under stress. In fact, I am convinced that by living a fuller life you can be more creative and are more open to inspiration."

AUROCH & A HARD PLACE

But what happens when the scope and timeline of your game is decided by an outside force, like a publisher? It's often midsize studios that are trapped in the vice – accepting high-pressure projects in order to make payroll. Auroch Digital, which now makes the space agency strategy game *Mars Horizon*, spent several

years bouncing between tabletop-related games like *Chainsaw Warrior*, *Ogre* and *Achtung! Cthulhu Tactics*. In its early days, developers weren't consulted when deals were made.

"The first two projects that I worked on were disasters, from a production point of view," partnership and production manager Nina Collins explains to me. "The team would have a contract put in front of them saying 'We're making this game in 12 months, for this much money'. Both of those projects were very much firefighting, and that's what led to them having crunch – we had overpromised on quality, on scope, and we didn't have enough time or budget. That was when, as a company, we said 'This isn't sustainable.'"

In the years that followed, Auroch started tracking the time staffers spent on tasks, in and out of normal working hours. "What you get with that data is the hidden work," creative producer Peter Willington says. "And if you can't track the hidden work, how in the hell can you make good estimates for future projects? Production is something that happens before you've signed the contract."

Beyond making more sensible promises to publishers, Auroch now schedules its weeks differently too – planning work for only four days out of five, leaving extra time for meetings. "You try and pull developers who are under pressure

DARK AGES *The most notorious examples of games industry crunch*



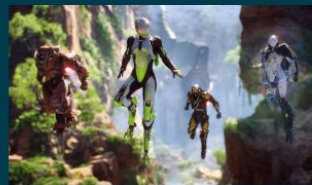
EA SPOUSE

"My happy, supportive smile is running out." The 2004 open letter from the anonymous partner of a game dev triggered multiple lawsuits against EA.



ROCKSTAR SAN DIEGO

The *Red Dead Redemption* studio was the subject of a similar letter six years later, which detailed mismanagement and overwork.



BIOWARE'S ANTHEM

A Kotaku report said many staff had taken doctor-mandated stress leave after working on the doomed jetpack shooter.



and crunching into a discussion,” Collins says. “Their stress levels go to the max. And the problem is that they don’t view meetings as part of development. And in that meeting, as a group, you might find out that you can cut 20 days off the AI.”

Willington knew these measures were working when, on launch day for *Dark Future: Blood Red States*, the team was finished coding by lunchtime – early enough to pass around a bottle of whisky. “I was very emotional about that,” he says. “That was the pivot point.”

LATE NIGHT CHAT

Beating crunch takes soft skills as well as spreadsheets, however. As soon as Mike Bithell made enough money to start employing people, he pledged that they wouldn’t crunch. But sticking to that principle has meant actively catching staff in the act of working too hard.

“Still to this day, I have to check if they’re working late,” the *John Wick Hex* director told me at Yorkshire Games Festival last year. “They’ve worked in environments where that’s expected of them, or often they just really love their job. They’ll think that’s the way to get into my good books to get a promotion or a pay rise. It’s my job as a boss to keep

reminding people that it’s not how they impress me.”

Auroch has encountered the same problem. “No matter how many times we tell people that we are anti-crunch, when they’re first starting a new job, people still feel like they’re trying to prove themselves,” Collins says. “It’s proving themselves in the wrong way – because there’s historic stuff from the industry. And it’s really important to stop people doing that, because they’re going to run themselves into the ground doing something that’s completely unnecessary.”

Traditionally, many game studios have presented crunch as optional – but the consequences of opting out have been severe. “It was never explicitly stated, but I think everyone knew that the ‘nine to fivers’ were not the ones that would get the good promotions, because they couldn’t possibly be that dedicated or ambitious,” van Lierop says. “What I want to hear from studio leaders is, they never have to talk to their staff about work-life balance or having healthy work habits because they all know it’s expected of them. At Hinterland, if we have to remind team members not to work too hard, it’s a failure of our leadership.” Nijman believes it’s important to lead

by doing. “If you’re the boss who’s working late hours, you’re just overburdening yourself and setting an unhealthy example.”

BOSS FIGHT

It’s this last point that has proven tricky to put into practice at some of the studios I’ve spoken to. Somewhat hypocritically, Bithell still works overtime, a fact his staff have called him out on. “We had a postmortem after we released *John Wick*, and the biggest piece of feedback from my entire team was ‘Mike works too hard,’” he says. It’s an issue Bithell Games is addressing by bringing in extra producers.

“That’s one of our objectives as a company,” he says. “We may never get my hours down fully, but that’s OK because I get to own the company. I get my name on the fucking front of the game. It’s a very different thing when you’re an employee, being paid hourly, and I can’t ask for the same degree of devotion.”

Auroch’s last two games involved no crunch at all, but some senior staff do still put in the extra time. “We’ve had someone start that will hopefully spread that out,” Collins says. “There’s always more to be done, but we can proudly say we do not do crunch.” ➤



**“ALL THE DATA WE
HAVE ON IT SAYS IT
DEMOLISHES
SOMEONE’S ABILITY
TO PRODUCE WORK”**

At Hinterland, members of the team have crunched on three occasions: once to get *The Long Dark* through Xbox certification before reveal at E3; once to fix PS4 technical issues before the game hit 1.0; and once to get overhauled story episodes out before Christmas of 2018.

“It’s no coincidence that these three instances all occurred around fixed external milestones,” van Lierop says. “Timing commitments we’d made to our partners or our players that we felt we couldn’t break. Our solution since has been to avoid making public commitments like that, and as much as possible to avoid lining up significant launches of new content with new platforms.”

QUALITY OF LIFE

It’s notable that *The Long Dark*, *Mars Horizon*, *Minit*, and *Disc Room*

are all reviewed as ‘Very Positive’ on Steam – the highest honour in the field of player satisfaction. Developers may worry that forgoing crunch will lead to unfinished games, disappointed critics, or frustrated fans waiting for updates. But all of the developers interviewed for this article believe their games have turned out better since turning their backs on overwork.

“The first game I worked on [at Auroch] turned out fine, but no one was like ‘This is great,’” Willington says. “We’re making our best looking, best playing games since we stopped doing this stuff.”

“Even if you’re a cynic, crunch is a bad idea,” Bithell says. “All the data we have on it says it demolishes someone’s ability to produce work. It’s really just common sense. You have to understand what the biological limitations of being a human being are. You can’t work crazy hours, and the research all backs up that position.”

“It’s generally understood that work done under extended crunch conditions is often not good or high-quality work,” van Lierop explains. “Why would you want that? You’re burning your people out to get worse results and eventually lose them, which just puts more burden on the next batch. I don’t think the results are compromised by avoiding crunch. I think they are definitely compromised by depending on crunch to get your games out the door.”

BLOOD DIAMONDS

The question, then, isn’t whether avoiding crunch works. It’s whether the rest of the industry will follow suit. Bithell’s established reputation allows him to stand up for his team in publisher negotiations, while Auroch’s cashflow means it can afford to delay milestones – both privileges that a new indie team may not have at their disposal.

Larger developers, meanwhile, have less incentive to end crunch. “They can pull in another coder that’s just as good,” Collins says. “We couldn’t afford to lose those people, so we had to sort it out.” What’s



LEFT: Bithell's breakthrough hit *Thomas Was Alone* was made purely in his evenings and weekends.



RIGHT: *Volume* is an underrated Bithell Games stealth sim.



more, AAA studios are often beholden to shareholders – who can be much less understanding than players. “Hitting quarterly revenue targets becomes the measure of business health, versus the health of the teams or the quality of the products,” van Lierop says.

But, as we’ve seen before, players can influence whether or not developers ruin their health and home lives, even at the highest levels – by voting with their wallets. “What we need in games is more of a ‘blood diamonds’ concept – societal pressure that acknowledges the human cost of a product should be

part of how we measure its value,” van Lierop says. “Until consumer sentiment changes and people stop buying games made under unhealthy working conditions, nothing will fundamentally change around crunch.”

“Even if it would make no difference for the final product, the fact that it makes people unhappy, unhealthy, and takes so much time off their lives is more than enough reason to end the whole practice once and for all,” Nijman says. “Instead of saying ‘Not destroying the Amazon Rainforest is good for the economy,’ people need to realise that

we shouldn’t be destroying the Amazon anyway.”

Play *Minit* today, and you’ll find it filled with places and people the team encountered while out living their lives, not staring into a monitor. “Spending time not working is important to fuel that,” Nijman explains. “There’s a quote floating around somewhere that there are two types of poets: those who try, try, try and squeeze and eventually get their words on the page, and those who live life and sometimes poetry happens. I want to keep designing games like that second group of poets.” ■

FREE-RANGE GAMES *The best work of the devs we interviewed*



MARS HORIZON

Basically your own NASA control room. Auroch’s management sim is friendlier than *Kerbal* but deeper than space itself.



MINIT

In this *Zelda*-like adventure, your lives last only 60 seconds. It’s a typically intense and giddy concept from Vlambeer’s Jan Willem Nijman.



THE LONG DARK

“Your endless struggle to keep the Grim Reaper at arm’s length is enormously rewarding,” said PC Gamer’s Andy Kelly of Hinterland’s chilly survival game.



JOHN WICK HEX

Put together with the input of Hollywood fight choreographers, this is turn-based tactics at its most stylish.

PC GAMER

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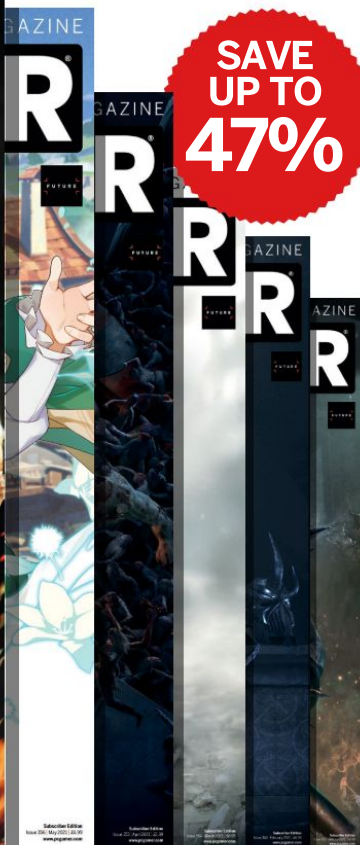
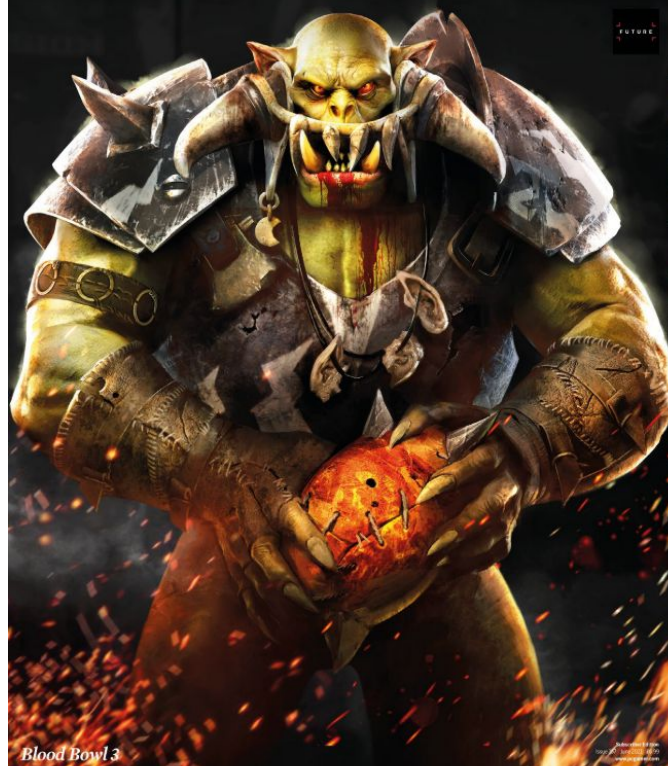
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PCSpecialist



@PCSpecialist

REVIEW

HOW WE REVIEW

We review each game on its own merits, and try to match it to a reviewer who's a passionate expert in the field. The main aim of reviews is to help you make buying decisions. To this end, we're selective about what we review, and try to focus on the notable, interesting, exciting or surprising.

DOWNLOADABLE CONTENT

DLC might be new missions for a game, or it might be a single new item. If we think you want to know about it, we'll review it.

EARLY ACCESS

Any released alpha, beta, or otherwise unfinished game that you can currently pay for. For these games, we won't assign a score, but we will tell you whether they're worth your time.

THEY'RE BACK

Whenever there's a bargain or re-release of a significant game, our expert will revisit it and tell you whether it holds up today. With jokes.

OUR SCORING SYSTEM EXPLAINED

00%-09% Broken or offensively bad; absolutely no value.

Example *Leisure Suit Larry: Magna Cum Laude*

10%-19% We might be able to find one nice thing to say about it, but still not worth anyone's time or money.

Example *Gettysburg: Armored Warfare*

20%-29% Completely falls short of its goals. Very few redeeming qualities.

Examples *Family Guy: Back to the Multiverse*

30%-39% An entirely clumsy or derivative effort. There's little reason to play this game over a similar, better one.

Examples *Trials of the Blood Dragon*

40%-49% Flawed and disappointing.

Examples *Aliens: Colonial Marines*

50%-59% Mediocre. Other games probably do it better, or its unique qualities aren't executed well.

Examples *Primordia, Homefront: The Revolution*

60%-69% There's something to like here, but it can only be recommended with major caveats.

Examples *No Man's Sky, Ghost Recon: Wildlands*

70%-79% A good game that's worth playing. We like it.

Examples *Prey, NieR: Automata*

80%-89% A great game with exceptional moments or features, and touches of brilliance. We love it.

Examples *Overwatch, Night in the Woods*

90%-94% A compelling recommendation for most PC gamers. Important to PC gaming, and likely ahead of its time.

Examples *Bayonetta, Dishonored 2*

95%-96% Far and away one of the best games we've ever played. We recommend it to the entire world.

Examples *Half-Life 2, Kerbal Space Program*

97%-100% Advances the human species. Boosts the immune systems of nearby children and small animals. w



The Editor's Choice award is granted in addition to the score, at the discretion of the PC Gamer staff. It represents exceptional quality or innovation.

Find out more
www.bit.ly/pcgreviews



Out now

The pandemic's effect on the games industry has been a strange thing to witness. For countless studios it's clearly been a behind-the-scenes disaster – a huge wave of high profile delays suggests the resulting technical and logistical problems have taken a heavy toll. But for some studios it's been a weird kind of opportunity. *Outriders* is a perfect example. Launching into a release schedule more barren than the team could possibly have imagined when they started work on the looter-shooter, it's undeniably received far more attention and interest than it ever could have if it were competing for space with some of the big budget behemoths that were supposed to come out around it. It'll probably have a totally different life than it would have under different circumstances. Which raises the question: does someone at People Can Fly have a monkey's paw?

Robin

ROBIN VALENTINE

PRINT EDITOR

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LET US KNOW WHAT YOU THINK

Email us via letters@pcgamer.com with your reactions, or simply tweet us your thoughts @PCGamer



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This month's lootin', shootin' reviewers...



MORGAN PARK
Specialist in
Gun mods

Currently playing
Outriders

This month
Realised how much he misses energy-whipping people into explosive barrels.



PHIL SAVAGE
Specialist in
Honourable crime

Currently playing
Yakuza 6

This month
Spent a lot of time looking for the perfect tailored suit for doing martial arts in.



FRASER BROWN
Specialist in
Space rubbish

Currently playing
Spacebase Startopia

This month
Played a game full of fantastical tech and exotic aliens, and fell in love with the bins.



RICK LANE
Specialist in
Word salads

Currently playing
Trials of Fire

This month
Finally opened his eyes to the joys of roguelike deckbuilders.



RACHEL WATTS
Specialist in
Pachydermatology

Currently playing
Shelter 3, Genesis Noir

This month
Had to learn how to look after a herd of glitching elephants who hate fruit.



TOM SYKES
Specialist in
Crashing, sinking

Currently playing
Super Raft Boat

This month
Declared a new mortal enemy: rocks. The jury's still out on mountains.



MATT ELLIOTT
Specialist in
Item descriptions

Currently playing
Dark Souls Remastered

This month
Took a trip down a slimy, horrid, deadly memory lane.

RIDE AND DIE

OUTRIDERS is an inconsistent looter shooter that isn't worth the ride. *By Morgan Park*

When I think of People Can Fly, I think of *Bulletstorm*, an absurdist FPS remembered a decade later for its outrageous weapons, like the crazy-ass drill gun that could be steered in mid-air and penetrate multiple enemies. By the end of that game, launching bodies 20 feet in the air and energy-whipping them into an explosive barrel was one of the most mundane ways to solve a problem.

It's almost hard to believe that *Outriders* shipped with the same studio logo on the box, because it looks like the bland shooter that *Bulletstorm*'s meathead characters would make fun of. It's a surprisingly shallow looter shooter that tries very hard to look like *Destiny* and play like *Gears of War*. But honestly, I'd rather replay any of the games I've already mentioned than spend more time on *Enoch*.

In my first 13 hours with *Outriders*, I said that I was still waiting for it to impress me as I completed the campaign and looked toward the endgame Expeditions mode. My opinion has brightened a bit: Expeditions do represent the best that the game has to offer, but they're not compelling enough to fuel a habit.

I have larger problems with the core fundamentals underlying the game. *Outriders*' shooting mechanics, loot, level design, and matchmaking

aren't very good. The sum is a mediocre b-movie looter lookalike that can be safely skipped.

As a shooter fan first and a looter fan second with days worth of time in *Destiny* and *Borderlands*, I think

People Can Fly and I have opposing priorities in our looter shooters – everywhere I would zig, *Outriders* zags. Nothing illustrates this better than *Outriders*' extensive class skill trees for the four

classes that mostly consist of tiny, incremental stat boosts. I can see the numbers get higher and trust that an extra ten percent damage against the stronger Captain enemies is helping, but the result doesn't meaningfully change how I play the game.

The same goes for *Outriders*' weapons, which span a mostly predictable variety of assault rifles, shotguns, DMRs, sniper rifles, and LMGs. I spent almost the entire

A mediocre b-movie looter lookalike that can be safely skipped

NEED TO KNOW

WHAT IS IT?

A third-person co-op looter shooter

EXPECT TO PAY

£50

DEVELOPER

People Can Fly

PUBLISHER

Square Enix

REVIEWED ON

RTX 2060, Ryzen 5 2600 3.4GHz, 16GB RAM

MULTIPLAYER

Co-op for up to three players

LINK

[outriders.square-enix-games.com](https://www.outriders.square-enix-games.com)

campaign cycling through nearly identical variants of the same two or three shotguns and rifles, trashing the old one each time one with a bigger number came along.

It wasn't until the back half of the campaign that I finally started finding enough Rare weapons to take advantage of *Outriders*' generous mod system. This is the one area where People Can Fly unshackles players to theory-craft optimised builds to their heart's content. You see, dismantling any armour or gun (and you'll pick up many) for materials automatically banks its mods so that they can be later applied to any other gear you've got, as many times as you like.

It's a fairly radical departure from the grindy crafting systems the genre is known for. Rolling the perfect combination of perks on your favourite *Destiny* guns could take hours, but it's just a few clicks when you're playing *Outriders*.

MOD CONS

I just wish it didn't take so long to get to that point. The majority of *Outriders* is its campaign, and I wasn't starting to have fun with weapon mods until it was almost over. The flexibility of *Outriders*' mods stands out as its most innovative features, but it has the side effect of sucking any personality out of the gear itself.

That's exactly what happened with the first Legendary I scored, the Thunderbird, a gnarly-looking assault rifle carved from alien bones. Its tier three Ultimate Storm Whip mod is a nasty damage bonus that calls a thunderbolt down from the sky with every other connected shot like Thor himself had commissioned it. The Thunderbird instantly became my favourite gun after the massive pile of common drops that had preceded it. It had a clear identity. I was bummed out when its firepower was quickly outpaced by common drops after a few hours, but I eventually dismantled it so I could make use of its mods on other weapons.

HEALTH SCORE *Regaining health isn't as simple as picking up a medkit*



PYROMANCER

Specialties: Medium range, damage-over-time

The Pyromancer only regains health when an enemy afflicted by their fire abilities is killed. That may sound strict, but it's easy to get to grips with.



TECHNOMANCER

Specialties: Long range, support, healing

The Technomancer is easily the most survivable class in *Outriders*. Any damage dealt with their weapons triggers health regen, so keep firing.



TRICKSTER

Specialties: Mobility, execution, close-range.

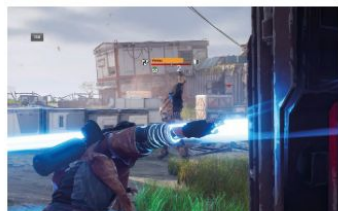
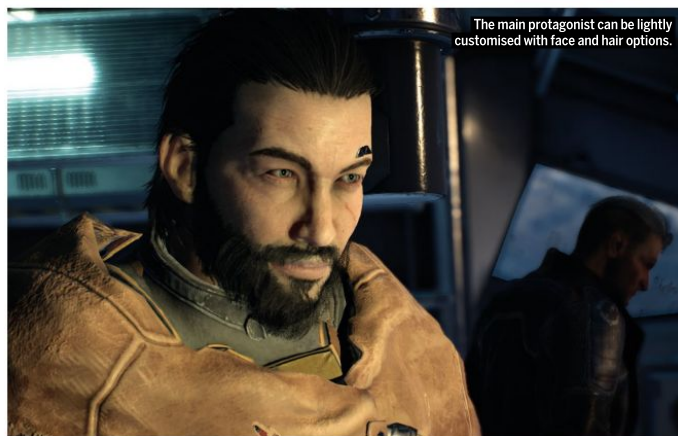
The Trickster has, appropriately, one of the trickiest ways of regaining HP. They have to kill enemies up close, so shotguns are ideal.

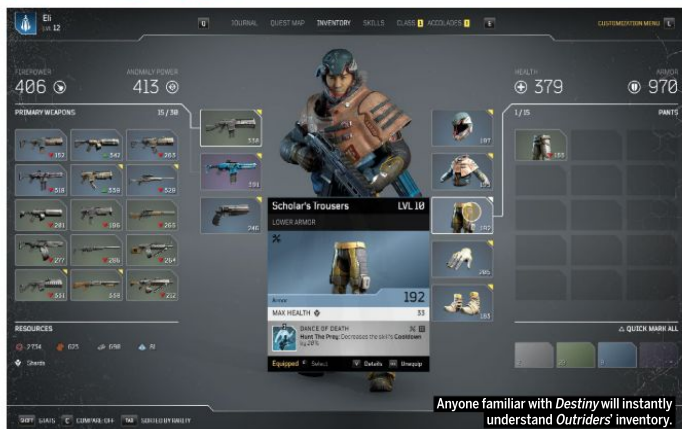


DEVASTATOR

Specialties: Defence, close-range, stuns

The Devastator is like the beefier version of the Trickster, trading agility skills for fortifications that make them the tankiest class in the game.





Outriders features mostly humans, but sometimes a crazy alien appears.



✱ Naturally, I slotted the Storm Whip perk into my newest rifle, but something was lost in translation. Barbecuing alien dogs just ain't the same when it's coming out of a dull steel rectangle. Even though *Outriders* is designed around this freeform hot swapping, for me, it dilutes the feeling of finding something truly unique and powerful. Sorry, Thunderbird, you're not as special as I thought. I've got 80 Mjölhnir guns now.

FIGHT, NO FLIGHT

I like third-person shooters just fine, but *Outriders* doesn't use the perspective to its advantage. A loot shooter where you can barely see your coolest guns seems counterintuitive. The back of my guy's chunky armour clogs up the screen, while I can barely make out the back-right flank of my gun barrel. This is nothing new. First-person loot games empower intimate connections with the rare guns that motivate players to trudge on. In *Borderlands* or *Destiny 2*, equipping a new gun is almost like playing a different character. My *Outrider*'s decidedly unathletic moveset doesn't quite stack up with this.

Seriously though, for a game about cutting loose with godlike powers, I have no idea why *Outriders* is so horizontal. Every arena is an uneventful grid of waist-high cover straight out of Xbox 360-era *Gears of War*, right down to the way that every player character is firmly glued to the ground. A nice floaty jump would pair perfectly with my Trickster's teleportation build or the Pyromancer's fireballs.

POWER TRIP

There's also a huge focus on class-specific magical abilities. I mained a Trickster that can only regain health and shields by killing baddies up close. The main damaging skill you start with, the Temporal Blade (which is more of a shockwave that zaps targets down to their skeleton before eventually exploding), served me better than the one or two other offensive skills unlocked over time, so I just stuck with it throughout.

Co-op definitely seems like the way to go. Every fight felt

PEOPLE CAN FLY *A brief history of the storied shooter studio*



PAINKILLER
2004
This FPS is from an era where everything was inspired by Doom. Except instead of legions of demons, you're slaying Lucifer's armies.



GEARS OF WAR (PC)
2007
PCF was the studio behind the original *Gears of War*'s PC port. Following its success, Epic acquired a majority stake in the studio.



BULLETSTORM
2011
PCF released its last great FPS, *Bulletstorm*, a few years after its Epic partnership began. The shooter is still remembered for its inventive weapons.



FORTNITE
2017
PCF continued to collaborate with Epic and is even credited as a co-developer on *Fortnite*, one of the biggest games in the world.



OUTRIDERS
2021
Looking back at the studio's past work, *Outriders* feels like a combination of PCF's love for FPS weapons filtered through their work on *Gears of War*.

immediately more balanced with one or two teammates by my side to share the aggro. I just wish matching up with other players wasn't so bad if you don't have friends to play with. There's currently no way to matchmaking into a specific Expedition, so the best you can do as a solo operator is join a random session and hope they want to play the one you do. You could also wait for someone to join you, but that didn't happen a single time to me despite keeping my party open.

Good luck talking to them once they finally do join, though.

There's no native voice or text chat and People Can Fly isn't planning on ever adding it.

People Can Fly has been very clear that *Outriders* isn't a service game

OUTLIERS

People Can Fly has been very clear that *Outriders* isn't a service game. What's already here is what the game is. If I hadn't known that going in I would be pretty surprised as I rolled credits on the campaign, because the entire thing feels so insignificant. The story follows your player, one of the last *Outriders* (elite soldiers, basically), on a trip across humanity's new home planet Enoch to call down resources from a long-abandoned colony ship. Early on your *Outrider* becomes Altered, which is basically like having elemental Light powers from *Destiny*, but with a different proper noun. It's a dull tale that seems to have little other purpose than setting up an endgame.

And then, the endgame happens, and it's surprisingly bare. I spent the

better part of my weekend wrapping my head around *Outriders*' Expeditions, a rotating pool of around 15 challenging missions that can get a lot harder as you unlock over a dozen difficulty tiers through repetition. The quality of loot rewards scales up and down depending on how fast you get them done, but if the squad is wipped even once, you have to start over.

It's a neat little mode that I could lose a few hours to with friends, similar to the hardest runs of *Mass Effect 3*'s surprisingly fun multiplayer mode. That's the only way I'd recommend playing Expeditions unless you've optimised a loadout around self-heals.

I guess that means I'm pretty much done with *Outriders*. There's something here for folks that go bananas for the most granular of class customisation – all those incremental class boosts are probably a dream to my most min-maxing of friends. It'd be easier to get excited about that stuff if *Outriders*' basics were as good as what else is out there. Xbox Game Pass feels like the perfect home for a divisive game like this that rubs players the wrong or right way depending on what you're looking for. It's a shame that PC Game Pass subscribers aren't getting the same kind of deal, but I think *Outriders* is a safe skip either way. ■



PC GAMER

VERDICT

Buried by unsatisfying combat, *People Can Fly's Outriders* is a looter that ends right as it's starting to get somewhere.

63

DRAGON AGED

YAKUZA 6: THE SONG OF LIFE isn't a major departure from its predecessors, but still finds its own rhythm. *By Phil Savage*

One of the peculiarities of Sega's PC port release schedule – releasing the series (almost) chronologically, rather than in the order they were made – is it lessens the original impact that *Yakuza 6* once had. It's no longer a showcase for the new Dragon engine, because *Yakuza Kiwami 2* exists. And it's not as experimental or new as *Yakuza: Like a Dragon*, whose reworked combat and fresh protagonist make it a great jumping on point for newcomers.

Instead, this is Kazama Kiryu's final game as protagonist – the end of a story that has played out over hundreds of hours across six previous games. Which is to say, if you're new to the series – or have only dipped your toe into a handful of them over the years – come back to this one later, when you've fallen a bit deeper down the rabbit hole.

After an *in media res* opening to set the tone, you're treated to a lengthy sequence that follows on directly from *Yakuza 5*'s semi-cliffhanger ending. A lot of the opening hours are spent slowly moving the pieces into place – dealing with the fallout and ramifications of *Yakuza 5*, and getting characters ready for the drama of the finale. The upshot is this: Kiryu, arrives in Onomichi – a port city in Hiroshima – with a baby in tow.

While you'll still spend plenty of time in Kamurocho – both in the story and as the de facto hub for minigames – Onomichi is both the heart of *Yakuza 6*, and a statement of intent. Where Kamurocho has

karaoke, old Sega arcade machines, a cat cafe, and a new gym that lets you train your skills, Onomichi is smaller, quieter and more rural. It's a close-knit community that Kiryu has to work hard to crack, and is sparse with its distractions. An entire chapter of the story is dedicated to Kiryu's search for baby formula, because all of the shops have closed. It's that kind of town.

Onomichi's prominence sets *Yakuza 6* apart from its predecessors

Onomichi's prominence sets *Yakuza 6* apart from its predecessors, offering a change of pace that gels well with the story being told. As Kiryu works to enamour himself to the locals, he falls in with a small-time yakuza family – a loveable bunch of losers whose hearts are nevertheless in the right place. It's a reprise of *Yakuza 3*'s setup, but one that offers a contrast to the destructive political dealings of the clans that threaten to once again tear down everything Kiryu cares about. There's plenty that doesn't land: giant, absurd twists and convoluted contrivances that are the hallmark of the series. But when

NEED TO KNOW

WHAT IS IT?
The seventh *Yakuza* game, set before *Like a Dragon* in the chronology

EXPECT TO PAY
£15

DEVELOPER
RGG Studio

PUBLISHER
Sega

REVIEWED ON
GeForce GTX 1070,
32GB RAM, Ryzen 7
3700X

MULTIPLAYER
Yes, for minigames

LINK
[yakuza.sega.com/
yakuza6](http://yakuza.sega.com/yakuza6)

Yakuza 6 gives its characters room to reflect, it's often a triumph.

ENGINE TROUBLE

As the first Dragon Engine game, *Yakuza 6* does have some compromises. Its version of Kamurocho isn't as fully formed as in *Kiwami 2* or the PlayStation exclusive *Judgement*, with sections of the city closed off. And I never quite gelled with the combat. Rather than *Yakuza 0*'s crisp, clean encounters, here the animations are more fluid, yes, but sluggish as a result. I've seen speculation that it's a deliberate attempt to depict Kiryu's advancing age, but the upshot is it's a game about fighting that never feels as satisfying as its predecessors.

Yakuza 6, does, at least, get a big performance update on PC, with uncapped framerates providing a nice upgrade over the PS4 version. Even playing on an increasingly aging GTX 1070 graphics card at near-maximum settings on 1440p, it held consistent at around 60 fps. And while *Yakuza* has never exactly been the prettiest series, the Dragon Engine games continue to look great with incredibly detailed faces and animations.

The broad strokes of every *Yakuza* game are the same: a story that runs the gamut from hard-boiled mystery to interpersonal drama, a suite of ridiculous substories, and a handful of minigames, all tied together by a likeable protagonist able to withstand the tonal shifts. The difference between each comes down to a handful of things: the plot, the themes, the surprising new distractions, the feel of the destinations. *Yakuza 6* isn't the best game in the series, but it's definitely a deserving part of it, and well worth playing... at least when you're ready. ■

PC GAMER VERDICT

The setting proves that the series still has some tricks, making *Yakuza 6* a worthy finale for its main protagonist.

79

ONOMICHI MEMORIES *Kiryu's coastal holiday, in pictures*



CENTRAL SHOPPING DISTRICT
Come and meet the famous ramen-headed mascot, Ono Michio.



JUNGJAI FERRY DOCK
Try a spot of spearfishing. Just beware of the giant emperor squids.



RYUNAN SHRINE
Receive a boon by gifting statues the assorted detritus of your inventory.



LA PENTE
The perfect spot to plan a full-scale war against a gang of wrestlers as you wrap up Kiryu's trip.

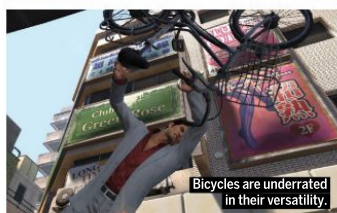
Another day, another gang of goons to kick.



Remember: Kiryu never kills anyone.



Never start a fight unless you can look good doing it.



Bicycles are underrated in their versatility.



The RTS minigame works as well as can be expected. (Not very.)

SPACE MANAGEMENT

Manage a space station fuelled
by nostalgia in **SPACEBASE STARTOPIA**. By Fraser Brown

Realmforge Studios' *Spacebase Startopia* is a homage to one of my favourite management games. More than an homage, really, as it lifts pretty much everything from the original *Startopia*, even the name – it's more like an unofficial remake. After two decades of waiting, I should be happy to return to my donut-shaped space station, but instead I'm conflicted. Hewing so closely to the original also emphasises the ways in which it misses the mark, and some of the new additions leave a lot to be desired.

We got off on the wrong foot, *Spacebase Startopia* and I, when it introduced me to my relentlessly irritating virtual assistant. Clippy ain't got nothing on VAL, an AI buddy who keeps track of your objectives and ceaselessly puts you down with lines seemingly run through a text-to-speech programme. VAL is insufferable, but at least you can mute its voice. Unfortunately, the same can't be said for the text pop-ups, full of laboured sci-fi references and awful banter.

Thankfully, *Spacebase Startopia* is still capable of being charismatic, full as it is with aliens and sci-fi oddities. Sometimes I'll even follow my diligent little droids around as they travel all over the station delivering crates and cleaning up after the dirty organics. Even the bins have a bit of personality, as they're actually robots who drop off their gross cargo at the recycler once the droids have filled

them up. They have very serious faces and I love them.

With your station teeming with life, the three-level system proves to be a boon. The donut is split into sections, separated by bulkheads that can be opened for a fee, and three specialised decks. There's the sub deck with all your essentials, like berths, medical centres and factories; the fun deck where your visitors can let

their tentacles down; and the bio deck, where resources grow and visitors can hang out and meditate.

The deck system was one of *Startopia*'s defining features and works just as well here. It splits the vast station up into chunks, and means you're never staring at the same stuff for hour. So when raiders are killing people on one deck and won't take a break just because you're busy trying to stop everyone from suffocating on another, that bit of distance makes it easier to prioritise.

The deck system was one of *Startopia*'s defining features

NEED TO KNOW

WHAT IS IT?
A spiritual successor to *Startopia*, the classic space station management sim

EXPECT TO PAY
£46

DEVELOPER
Realmforge Studios

PUBLISHER
Kalypso Media

REVIEWED ON
GTX 1080 Ti, Intel i7-8086K, 16GB RAM

MULTIPLAYER
Yes

LINK
bit.ly/31SUyoX

WAR IS HELL

Speaking of raiders, the fights sure do suck. It doesn't matter if it's pirates or monsters popping out of alien cocoons, combat is the least entertaining aspect of the job. Managing your security bots and mechs mostly amounts to just clicking on the thing you want to kill... and that's it. Each class of mech also gets one unique ability, but that feels like overkill for encounters this shallow. Getting into a fight also means switching to a different mode where you can only control your combat units, introducing an unnecessary amount of faffing around as you switch back and forth. It's one of several UI crimes committed by *Spacebase Startopia*. Fights are uncommon in the campaign, thankfully, at least until the last few missions.

Along with invasions, other random events and time-sensitive choices crop up that offer more compelling management wrinkles. One of these events even taught me a valuable lesson: maybe it's OK to let a plague take root in your station if you're also in the business of curing people. I have some regrets about my disgraceful behaviour and some aliens to apologise to.

I wish there was more of that: tough choices and corruption. The cartoon capitalism of *Spacebase Startopia* feels like fertile ground for these kinds of shenanigans, but they're so rare. Maybe I should be glad there aren't more misses like the new RTS layer, but management games have developed a lot over the last two decades, offering so many ways to build on *Startopia* instead of cloning it. I guess living in the past isn't such a good thing after all. But it can be fun to visit for a few days. ■

DECK-BUILDING Take a tour of your station



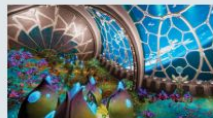
SUB DECK

This is where ships dock and visitors arrive – so it's also where you'll find essential rooms and facilities, like visitor quarters, the medical centre, security, and industrial buildings.



FUN DECK

Visitors can feed their insatiable desire for booze, dancing, and gambling here, forgetting all their troubles. Unless they have a gambling addiction.



BIO DECK

The bio deck is a huge garden that can be terraformed to produce resources, which can then be crafted into blueprints. It's also where visitors can do a spot of meditating.

PC GAMER

VERDICT

Spacebase Startopia is a missed opportunity to meaningfully build on a classic, but it's still an entertaining game.

63



HOT DECK

TRIALS OF FIRE is an irresistible card-based roguelike. *By Rick Lane*

On paper, *Trials of Fire* is everything I despise. I don't like turn-based roguelikes. I don't like card battlers, and I really don't like anything involving hexagons – the Poochie of the shape world. *Trials of Fire* features all of these, which in any sensible reality makes me the last person who should be reviewing it. But if you've looked out the window lately, through the haze of coronavirus toward the icecap-melting sun, you'll have noticed reality died on the way back to its home planet some time ago. As such, I'm unsurprised to discover that *Trials of Fire* is flipping excellent.

Set in a blighted fantasy land, *Trials of Fire* sees you pick a trio of adventurers from an eventual pool of nine, before embarking upon a series of set quests across procedurally generated maps. Between you and your key objectives are regular points of interest, ranging from small settlements to ancient ruins, prowling monsters and spooky forests. Encounters are initially presented in journal format, with the game describing the situation before offering a range of choices. Sometimes these choices require a skill check that results in a reward if successful, or damages your characters if you fail.

Other times, your decisions will trigger a fight. What's immediately striking about *Trials of Fire* is how good the combat feels. When you drag out a ranged attack to target an enemy, an arrow flies out from your counter and thuds into your opponent, causing it to skitter on its

space like a spun coin. When a character is killed, their counter bursts like a grenade, scattering shrapnel across the board. Yet this isn't what makes *Trials of Fire* special. That would be how cards simultaneously act as abilities and a resource.

By default, playing a card requires you to spend a resource known as willpower.

There are a handful of cards that generate willpower, such as Advance, which also enables you to move forward. But the primary way of acquiring willpower is to sacrifice cards in your hand. This pool can be drawn from by all three party members unless you're using willpower for movement, in which case the sacrificed card must come directly from that character's deck.

ALL HANDS

The tactical scenarios that result from this are gripping, with each new hand bringing new challenges. The

The primary way of acquiring willpower is to sacrifice cards

NEED TO KNOW

WHAT IS IT?
Procedural fantasy roguelike with turn-based, card combat

EXPECT TO PAY
£20

DEVELOPER
Whatboy Games

PUBLISHER
In-house

REVIEWED ON
AMD Ryzen 5 3600,
Nvidia GeForce 2080
Super, 32 GB RAM

MULTIPLAYER
No

LINK
whatboy.com/game

card battling is further bolstered by the RPG systems. Winning battles and completing quests levels up your characters, letting you either upgrade cards in your deck, or replace them with more powerful abilities. Yet the RPG elements can also work against you. Travelling across the map tires your party out, and the more tired your party is, the more your deck will fill with cards like Fatigued and Exhausted, which serve no purpose other than clogging up your hand.

Balancing survival with progress is one of the game's main challenges, especially since reaching a quest objective usually triggers a tough boss fight that will test your affinity with your deck. If your party gets wiped out, the quest is over. This can be a little galling, especially if you're near the end. But most quests are designed to be completed in two to four hours. Meanwhile, failure still grants experience, unlocking new cards for your existing party, and new characters like the witch, who specialises in stealing enemy cards and using them against your foes.

For a game that borrows so many different ideas and mechanics, *Trials of Fire* is impressively seamless. The only real issue is how the storytelling suffers due to the game structure. While not startlingly original, *Trials of Fire*'s fantasy world is convincing, while the encounters are written in pacy and engaging prose. Yet the quests themselves are straightforward MacGuffin hunts, while your party characters have little personality outside of battle.

Overall though, it's a minor blemish. *Trials of Fire* is a taut RPG roguelike that successfully distills the action and mystique of sword and sorcery into card battling form. ■

WITCH RECOMMENDED

Here's a few examples of the Witch's devious skills



MIND DRAIN

Does 2 damage and then steals a card from your enemy's deck.



BURROWING BARB

Does 2 damage and embeds into the enemy's deck. Returns to your deck when shuffled into their hand.



REVULSION

Adds 3 defence, then strips all enemy defences equivalent to your current defence total.

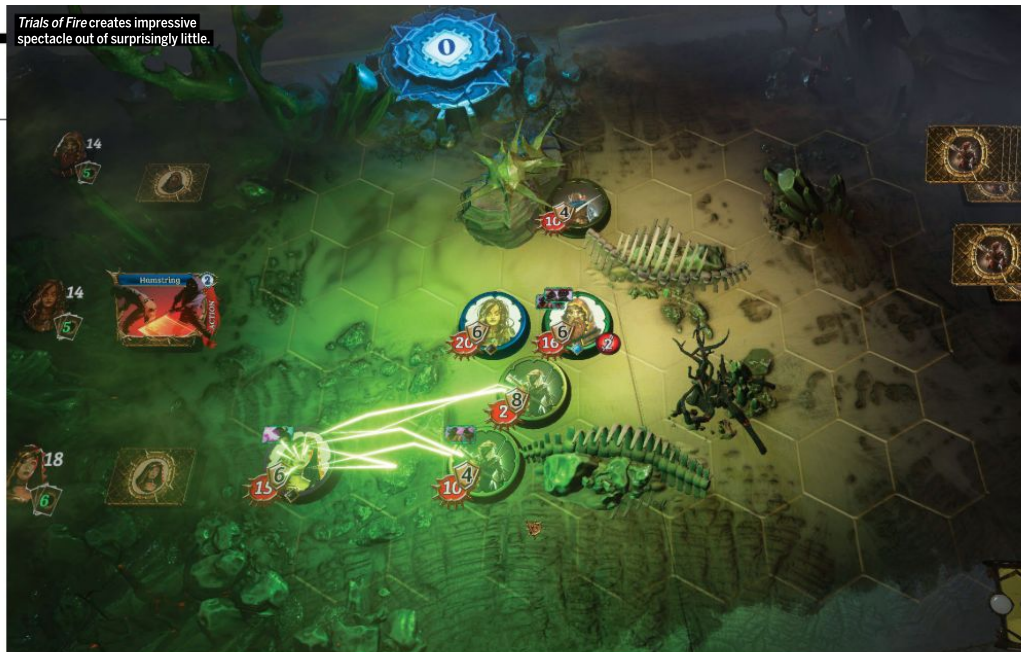


PC GAMER VERDICT

Trials of Fire's list of features may read like a videogame word salad, but the result makes for a fine RPG feast.

85

Trials of Fire creates impressive spectacle out of surprisingly little.



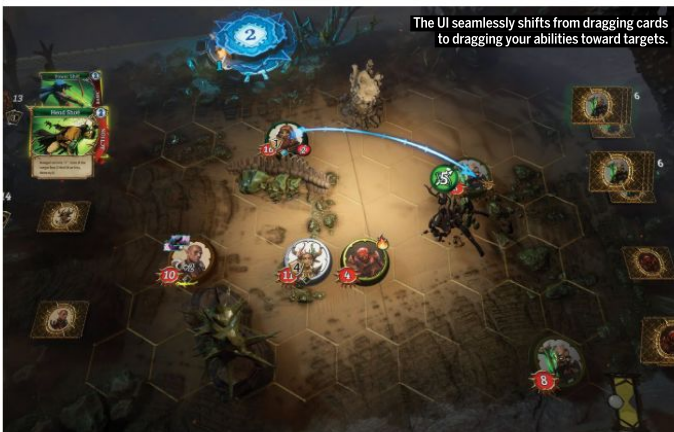
Some battlefields feature environmental hazards.



The storybook framing is neat, although the artwork doesn't always feel cohesive.



The UI seamlessly shifts from dragging cards to dragging your abilities toward targets.



MINI-VANIA

1990s anime lives on in **RECORD OF LODOSS WAR: DEEDLIT IN WONDER LABYRINTH**. By Eric Watson

If you're unfamiliar with the D&D-adjacent Record of Lodoss War novels, RPG, and anime from the '90s, *Deedlit in Wonder Labyrinth* will be mostly incomprehensible. The story has characters such as Parm, Pirotess, and Ashram, and working out their relationships is like starting *Wandavision* at episode nine without having seen a Marvel movie. Later, *Deedlit in Wonder Labyrinth* mirrors *Wandavision*'s exploration of grief, and that at least should make sense to anyone.

Non-fans don't need to worry too much about following the story. The Metroidvania genre traditionally values exploring 2D dungeons over cohesive narrative, and *Deedlit in Wonder Labyrinth* is no exception. It checks all the familiar Metroidvania boxes, though its shortness and lack of difficulty left me wanting.

Deedlit is a high elf whose billowing cape, long hair, and quick back dash are purposefully modelled after *Castlevania: Symphony of the Night*'s Alucard. She's capable of wielding a melee weapon and a bow, and can cast a few elemental spells. More importantly, she can harness the spirit of wind and the spirit of fire. With the tap of a button, I can switch between these two modes, or stances, dealing one damage type or the other with my basic weapon attacks, as well as becoming immune to that damage type.

Swapping between fire and wind is a surprisingly fun complication, and it's encouraged or required by most enemies, bosses and platforming challenges. Every enemy has at least one elemental weakness, resistance, or immunity, which are clearly displayed with clever dice iconography on a scale from one to six. An early-game dragon boss primarily deals fire damage, but is immune to fire himself. I can switch to fire mode as a defensive manoeuvre when he blankets the floor in dragonbreath and then swap to wind mode when I see an opening to slice and dice. Mode-swapping is used outside of combat too, with wind and fire barriers forcing me to

swap while jumping or running. The spirit of wind also grants the ability to hover over spikes and enemies, which is useful throughout the game. The spirit of fire grants the ability to detonate barrels, but that skill is

never used outside of the tutorial area, oddly.

A few late-game beasts, like the basilisk, are impressively large and powerful, but almost every enemy suffers from the same problem: they're shockingly sluggish,

making *Deedlit in Wonder Labyrinth* one of the easiest games I've played.

The exceptions are the boss fights, which feature a rewarding balance of attack rhythm memorisation and on-the-fly elemental swapping to exploit weaknesses. Mid and

A few late-game beasts are impressively powerful

NEED TO KNOW

WHAT IS IT?
A bite-size 2D pixelated Metroidvania

EXPECT TO PAY
£15.50

DEVELOPER
Why so Serious?, Team Ladybug

PUBLISHER
In-house, Playism

REVIEWED ON
Windows 10, AMD FX 8350 Eight-Core, Radeon RX 580, 24GB RAM

MULTIPLAYER
No

LINK
bit.ly/3u0tvKA

late-game bosses are mostly human-size opponents (who will be familiar to fans of the series) that can move and fight as quickly as Deedlit. A useful spell that summons a vine-shooting dryad is invaluable against a particularly tough boss who is weak against plants, while a rapid-fire, light-element bow works wonders against his even faster second form.

DONE WONDERING

Spells, weapons, bows and a select few additional power-ups are found by exploring the various paths and secrets of the dungeon. *Wonder Labyrinth* nails the vertical shafts and winding corridors that create the traditional *Castlevania*-like experience (minus the breakable chandeliers), but after exploring the map to 100%, I don't recall finding a single secret area.

Most Metroidvanias encourage backtracking by unlocking new abilities, but *Wonder Labyrinth* is far more linear, ushering me to each area one after another. Instead of acquiring new traversal powers, defeating the boss of each stage simply unlocks a new set of coloured doors, which opens the next area (and perhaps a single door in a previous area I can now access). The only exceptions are acquiring a double and triple jump, but their critical applications are disappointingly limited.

Deedlit in Wonder Labyrinth is a brief but fun foray into a well-worn genre. The mode-swapping and elemental attacks are enjoyable, but the game is over just when it starts to reach a proper crescendo, with 100% of the map revealed (and presumably all the gear and spells) in under six hours. Not quite a full symphony, but a fun little ditty none the less. ■

CHARACTER STUDY

Who's who In Lodoss War



DEEDLIT

A high elf and the only woman in the original adventuring party. She fell in love with the group's hunky leader, Parm.



PARN

The original hero of the series is a brave but inexperienced young warrior, like in every JRPG ever.



GHIM

The elderly dwarf warrior appears in the labyrinth as the merchant with a never-ending supply of health potions.



KARLA

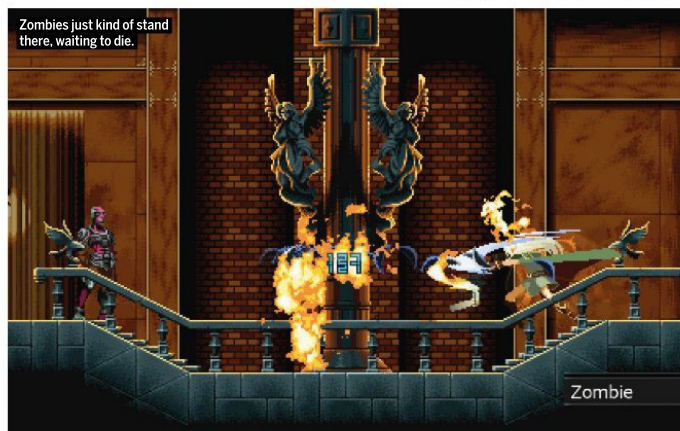
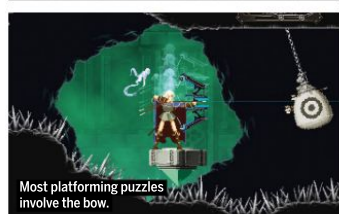
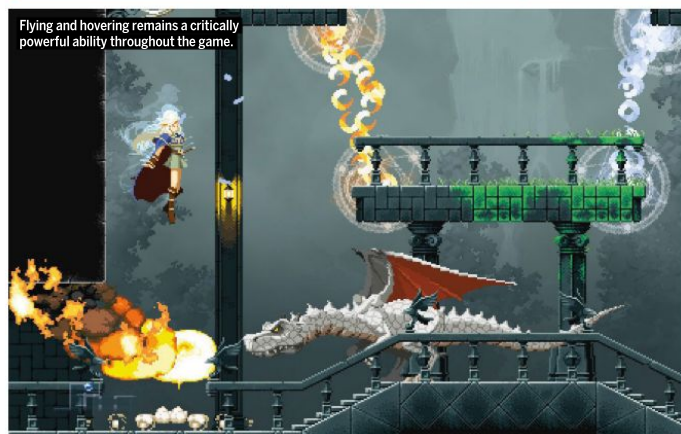
Karla's magical prowess and immortality makes her more of a lich than a witch (minus the skeletal thing).

PC GAMER

VERDICT

Record of Lodoss War: Deedlit in Wonder Labyrinth feels like the first half of a fun, but simplified Metroidvania.

68



ANIMAL CONTROL

SHELTER 3's nomadic wildlife adventure has majorly lost its way. *By Rachel Watts*

Might and Delight is a studio known for making survival games that capture the awe and ferocity of the wilderness. Or, if you're like me, you might know it as the studio who made that badger sim that made you cry. Well, it seems like it's still on a mission to make me bawl my eyes out over adorable creatures with the third instalment in the *Shelter* series, which this time features an elephant herd.

In *Shelter 3*, you play as a mother elephant who is leading her herd to a place that will reunite the group with their ancestors. Its world mixes elements of both previous games: the linear story of *Shelter 1* and the more open-world structure of *Shelter 2*. To survive, you need to keep your herd fed and protect them from danger.

As your herd makes its way across the plains, you're guided by environmental checkpoints and given a choice between two paths – after making your decision the next checkpoint will appear, leading you further into the world.

Exploring environments is a highlight of the game. *Shelter 3* looks like an elegant quilt whose multiple patterns have all been intricately stitched together. Each elephant in your herd has a unique skin pattern, and you can tell which calf belongs to which mother because they both share that pattern, like they were cut from the same cloth. It's a great touch.

You'll have your fair share of bamboo forests, scorching deserts, and watering holes to navigate through, and one section has you lead the herd through a mountain cave and emerge at a luscious lagoon on the other side.

Environments are lovely to travel through and since you're not playing as a predator you can happily frolic with wildebeest, rhino, and antelope without fear of them fleeing or attacking. But, as pretty

as the world is, problems reveal themselves straight from the get-go.

DANGER ZONE

The AI of the elephant herd was misbehaving throughout my time playing. Clipping was a constant issue, and the elephants would regularly catch on environmental areas. There were also problems with getting them to eat the fruit that I found, which was frustrating.

Navigation was also an ongoing issue. You can keep track of the next

NEED TO KNOW

WHAT IS IT?
A survival adventure where you play as a herd of elephants

EXPECT TO PAY
£12

DEVELOPER
Might and Delight

PUBLISHER
In-house

REVIEWED ON
AMD Ryzen 5 3600,
8GB, AMD Radeon RX
5700 XT

MULTIPLAYER
No
[LINK
mightanddelight.com](http://link.mightanddelight.com)

checkpoint by using your 'elephant sense', which makes the screen go dark and illuminates the next environmental destination, represented by a symbol. The issue with these points is that many of them took me anywhere but forward – some of them making me backtrack on myself, which feels actively counterintuitive in a game about a nomadic group that's always pushing forward to its destination.

The layout of the world is also confusing. I kept running into dead ends and accidentally wandering into dangerous areas that were meant for different chosen pathways. It also didn't help that I would always get the same choices at each checkpoint, regardless of the one I picked before. It just didn't feel like a journey where my choices mattered.

Out of the different paths you can choose, the ones that hint at danger are not that perilous at all. I easily sprinted across a scorching desert and didn't even need to bother protecting my herd against the tiger encounter since the AI kept instantly killing my calf no matter what I did. There was a great sequence with avoiding some hungry crocodiles and, although the AI was a bit off, it still made for some tense gameplay. However, it's only one moment out of a frustrating string of encounters.

What makes the previous *Shelter* games shine is their ability to show nature as both awe-inspiring and completely terrifying, but *Shelter 3* fails to capture that. Protecting your herd feels more like a chore than an emotional responsibility, and technical hiccups suck all the intensity out of the game. It breaks my heart since you can see the ideas and concepts of a great survival game, but the execution just isn't there. ■

PC GAMER VERDICT

Its environment is pretty, but that's not enough to forgive a game that ultimately feels unfinished.

55

IRRELEPHANT

Elephants are great, but their best attributes didn't make it into the game

1 With 40,000 muscles, an elephant's trunk is strong enough to break a tree branch, yet delicate enough to pick a flower.

2 Studies have shown that elephants are genuinely compassionate and altruistic towards other animals and humans.

3 They have super tough tusks that they use to dig into the ground, peel bark off trees, and fend off any predators.

4 These giants take regular mud baths to protect their skin from the sun, and to cool themselves down.



A quiet moment by a cool lagoon.



Crossing the desert is no problem if you hustle.



Keep your eyes open for what lurks beneath the surface.



Little heart symbols show when the elephant herd is happy.



Charging through a bamboo thicket lacks crunch.



STAR STRUCK

GENESIS NOIR's adventure traverses the entire history of the universe. *By Rachel Watts*

The Big Bang is wild when you think about it. All that we have come to understand – space, time, our universe, and life as we know it – are all part of a long chain started from one precise moment. Thinking too much about it is enough to send anyone spinning into an existential crisis, but *Genesis Noir* takes these grand themes in its stride, creating a cosmic adventure mixed with a detective story that goes down like a smooth glass of whiskey.

In *Genesis Noir*, the Big Bang isn't only the single biggest event in recorded human history, but a gunshot blast frozen in time, its bullet speeding toward your lover. To stop this event from meeting its inevitable end, you need to explore different pockets of time in the vast expanse of the universe, trying to undo the chain of events leading to this moment and thus changing the course of history.

This thematically epic adventure is wrapped up in a noir mystery, with your character caught in the middle of a love triangle. The trio consists of the character you control, a watch peddler named No Man, your lover and femme fatale jazz singer Miss Mass, and jealous shooter Golden Boy. These characters aren't really people, but something akin to gods, interdimensional entities, and cosmic beings. The story is similar to the godly dramas of Greek and Norse

legends, except this particular god has a trenchcoat, fedora and an affinity for trad jazz.

Genesis Noir's themes may be ambitious, but following along on this adventure is a breeze. Most of the

The game always has new ways for you to interact with a scene

time you'll be swept along through a string of inventive animated sequences, with occasional bits of puzzle-solving mixed in. The gameplay is a little experimental, and you'll usually be clicking parts of the scene and manipulating the environment to continue.

The game always has new ways for you to interact with a scene, like taking part in some call and response improv jazz, planting seeds that expand into all-engulfing black holes, or simply piecing a broken bowl back together. Most puzzles are pretty straightforward, but there were times where the interactions were a little abstract and it was difficult to work out what the game wanted from me.

NEED TO KNOW

WHAT IS IT?
An experimental point-and-click adventure that's cool, stylish and a bit odd

EXPECT TO PAY
£12

DEVELOPER
Feral Cat Den

PUBLISHER
Fellow Traveller

REVIEWED ON
AMD Ryzen 5 3600, 8GB, AMD Radeon RX 5700 XT

MULTIPLAYER
No

LINK
genesishnoirgame.com

Spending time clicking on every part of a scene and pressing all the buttons can break the pacing.

Even though there are moments lost in visual translation, *Genesis Noir* has a great sense of motion, and the majority of the game flows as smoothly as the coolest saxophone solo. Often there won't be a puzzle at all and you'll just be messing with the reality of the scene. In one section, I'm using an old rotary phone, and the background swirls around me as I spin its dial. I'll be jamming out on some giant piano keys only for them to melt away and reappear as the windows of a giant skyscraper.

THE HARD GOODBYE

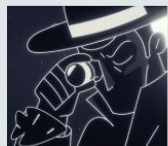
Although playing *Genesis Noir* can be an effortless ride, it does lose momentum when it gets to the last third. There were multiple times where the game's story hinted that it was coming to a close. By the time the game did come to a conclusion, it was tonally very sudden, missing out on a dramatic climax.

Genesis Noir may have some issues with pacing towards the end, but the way its story, themes and visuals are so tightly interwoven is spectacular. I love how No Man is constantly gravitating towards Miss Mass like he's helplessly caught in her orbit, how the gunshot blast is visualised to look exactly like the scientific diagrams of the Big Bang, and how an ice cube swirling around in a gin glass can look like the spinning planets in a solar system.

The noir genre is all about how characters are caught up in circumstances beyond their control. *Genesis Noir* captures exactly that, and its framing of human history and presentation of the Big Bang is the perfect way to explore it. ■

COSMIC CASTING

Here's the cast of characters that take centre stage



NO MAN

The protagonist who has the coolest job title ever: interdimensional detective.



MISS MASS

A jazz singer with hair so epically huge it has its own gravitational pull.



GOLDEN BOY

A jealous saxophonist who should really learn how to channel his emotions.

PC GAMER VERDICT

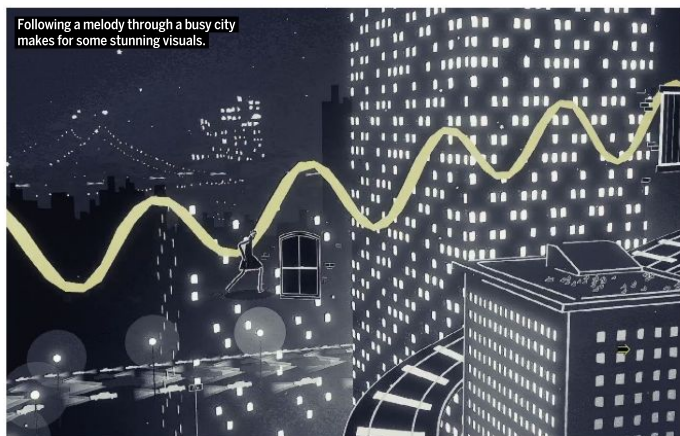
While it's a little abstract in nature, *Genesis Noir* is still an all-around stunning audio-visual adventure.

76

A sneak peek at Golden Boy's new album cover.



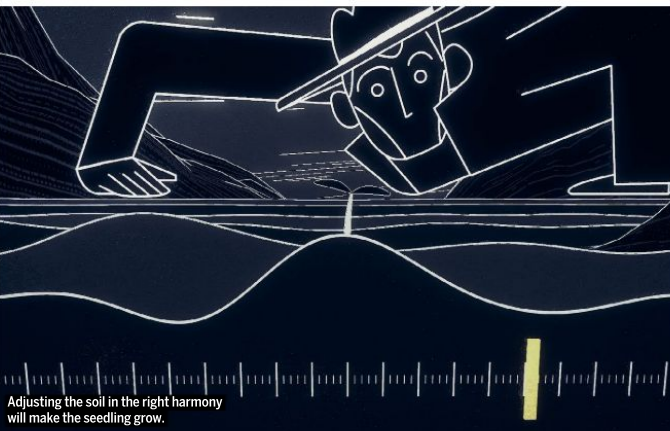
Following a melody through a busy city makes for some stunning visuals.



The comic-book visuals perfectly match the story.



You'll be leaping into this interdimensional gunshot blast.



Adjusting the soil in the right harmony will make the seedling grow.

HONEST ABE

ODDWorld: SOULSTORM's beautiful presentation suffers from some gaping technical oversights. *By Luke Winkie*

It's easy to root for Abe. The Mudokons have been enslaved for centuries by the Glukkons. Mudokons are worked to the bone, drugged and punished for any insubordination. It is up to one Mudokon to spark an insurrection and free his people from their chains. This is the plot of the 1998 PlayStation cult classic *Oddworld: Abe's Exoddus*, and many of the same core story beats are preserved in this 2021 'reimagining', *Oddworld: Soulstorm*.

Veterans of *Exoddus* will recognise *Soulstorm's* basic rhythms from the jump. This remains a 2D stealth puzzle game, in the traditions of *Gunpoint* or *Mark of the Ninja*, or the many other games that took initial influence from *Oddworld* all those years ago. Abe is a wimp; he can't really fight, nor can he absorb more than a quarter-clip of gunfire to his chest. Glukkon cronies crawl around the rickety, rust-stained scaffolding that make up most of *Soulstorm's* geometry, and Abe's best option is usually to sneak past the police force unnoticed, or MacGyver together a few meagre weapons. Perhaps you lay down a stun mine and make a beeline for the exit, or chuck an explosive can of soda at the feet of a thug before binding them up with a spindle of Sellotape.

That's the marquee new mechanic in *Soulstorm*. As in every new game on the market in the 2020s, crafting systems have come to Oddworld. Abe can accumulate a small trove of items that the player can stitch together into ammunition. This makes every encounter a lot more modular than was possible on the PlayStation. A herd of ravenous guard dogs in the way? Just pull up the inventory menu and produce a few makeshift grenades. *Soulstorm's* forge system doesn't deviate far from the bare essentials – you're only looking at 11 recipes here – but it is clear that the powers that be at Oddworld Inhabitants want its most ardent players to keep an eye on what they have in the inventory, in order to fire up the revolution.

Maybe Soulstorm is an ideal tribute to the PlayStation era

Aesthetically, *Oddworld* always bridged the gap between facile, Saturday morning cartoon and perturbing ultraviolence, and the idea of arming Abe with molotov cocktails

to clear the path is very much on brand. Unfortunately, I consistently ran into gaping lapses in gameplay polish that made *Soulstorm* more frustrating than it should be. Maybe *Soulstorm* is an ideal tribute to the PlayStation era, considering the period-specific jank in the code.

NEED TO KNOW

WHAT IS IT?
A reimagining of *Oddworld: Abe's Exoddus* from 1998

EXPECT TO PAY
£40

DEVELOPER
Oddworld Inhabitants

PUBLISHER
In-house

REVIEWED ON
Windows 10, GeForce GTX 1070, Intel Core i7-9700 CPU, 16GB RAM

MULTIPLAYER
No

LINK
oddworld.com

MORE THAN ODD

There were multiple times where the game's checkpointing system put me in the middle of an active firefight. I would die and respawn with hail of bullets inches away from Abe's head. The collision detection on the monkey bars is maddeningly erratic – I've clipped straight through them on more than one occasion. Those incidents are emblematic of a larger problem with *Soulstorm's* controls, which are slippery, floaty, and unreliable, all while simultaneously demanding razor sharp precision.

That's a shame, because the presentation of *Soulstorm's* story and characters is top notch. Oddworld has long been one of the great settings in videogames, and the Glukkons' bleak reign is extraordinarily vivid on modern machinery. The desolate strands of desert and steel, the horizon dotted with towering refineries belching inky blackness into the sky above – it's all pitch perfect. Oddworld has never looked more Oddworld. The same goes for the narrative, which takes a couple notable risks in how it alters some of *Exoddus'* motifs.

In some ways, *Soulstorm* is a videogame about addiction and its lasting consequences, which is territory rarely explored on PCs. All of this will likely strike a chord with Oddworld lifers, who are also more capable of looking past some of *Soulstorm's* more eccentric quirks. But as a casual appreciator of this universe, I spent a lot of my time with this game thinking about Lorne Lanning's long-gestating desire to make an *Oddworld* film. It's an attractive prospect: a new work from the talented Oddworld Inhabitants team, but without any busted collision detection. ■

ANOTHER WORLD

The history of an odd series



ABE'S ODDYSEE

1997
The bizarre, fart-filled first adventure.



MUNCH'S ODDYSEE

2001
A bold (one-footed) leap into 3D.



NEW N TASTY

2014
A remake of the first game, reintroducing Oddworld.



ABE'S EXODDUS

1998
This sequel was the inspiration for *Soulstorm*.



STRANGER'S WRATH

2005
A wild west first-person shooter spin-off.



SOULSTORM

2021
This... this is the one you're reading about right now.

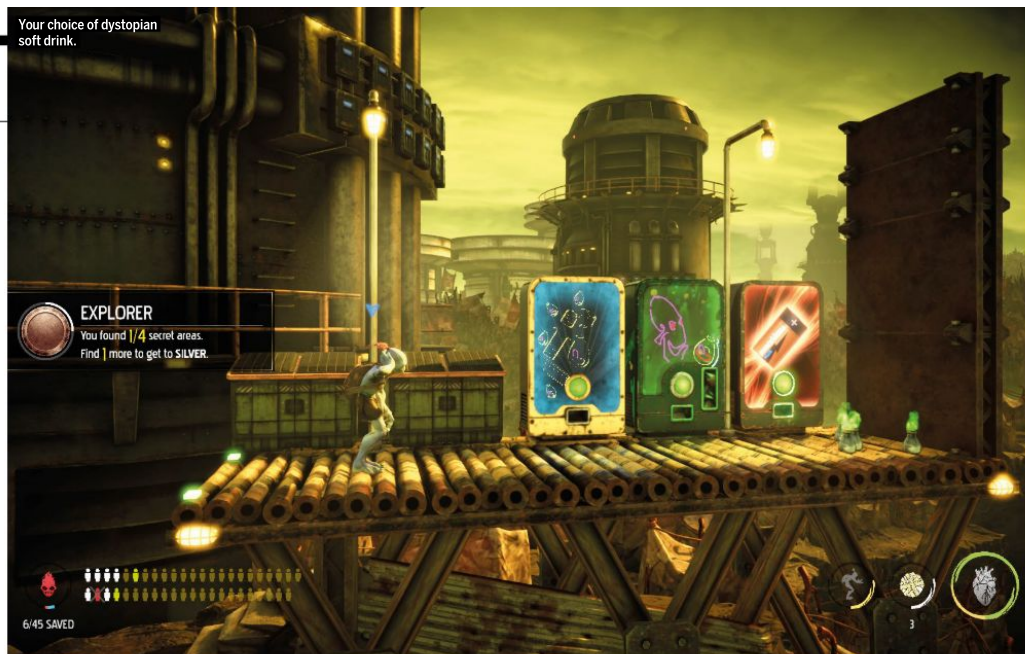
PC GAMER

VERDICT

Soulstorm's charm, characters and sincere narrative are imprisoned within some buggy, erratic software.

65

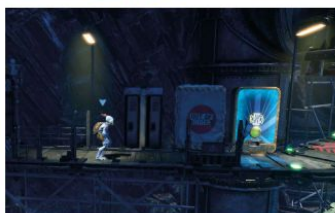
Your choice of dystopian soft drink.



Soulstorm's cutscenes are beautiful.



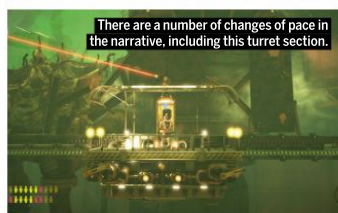
You see all those pipes out there?



You alone can save the Mudokons.



There are a number of changes of pace in the narrative, including this turret section.



Soulstorm is as much a puzzle game as it is a stealth game.

CAESAR SEIZER

TOTAL WAR: ROME REMASTERED makes an old game palatable again. *By Jon Bolding*

For years, *Rome: Total War* was my favourite game in the series. It struck the perfect balance between being a game and being an exercise in history. *Total War: Rome Remastered* brings back what I'd call the first great *Total War* game for the modern era, updating much of its outdated UI and scaling it up to 4K and widescreen displays. It'll be a trip down memory lane for those who loved the original and a more palatable experience for modern *Total War* lovers.

As a remaster, a lot of attention is going to be given to how it looks and sounds, but what you really get out of this remaster is how it plays. The old *Rome: Total War* didn't always play well with modern hardware. The new one does quite well. The rig I played it on was able to chop along at maximum settings and peak unit sizes happily, with no stuttering in even the largest battles.

That's not to say the graphics or sound are lacking. The music especially is much higher quality than the old game, and whatever magic was worked there has revitalised one of the best soundtracks of an entire era. The graphics? Well, it's a remaster, not a remake. They're better by leagues, with lots of sad building models getting remade, especially on the campaign map, but they're nothing compared to any modern *Total War*. The battles especially just look lackluster because the battlefields are so bare of terrain features. I think the best compliment I can give is that, with the changes made, the graphics look as good as nostalgia says they looked 17 years ago.

What hasn't changed with age is how good the *Rome: Total War* strategic layer is, and the revamped campaign map does a lot to highlight the simple-yet-deep empire management. The early *Total War* system of settlement population does all the strategic heavy lifting, asking you to choose between upgrading infrastructure for population growth and long-term income, upgrading trade for pure cash income and building military structures for access

Graphics look as good as nostalgia says they looked 17 years ago

to new units. The choices are well-served by a new UI outlining the building tech tree.

Adding to this is a new set of screens for the world map, letting you get access to information about the

campaign world state at a glance that could be a chore in the original *Rome: Total War* – which settlements are biggest? Where are the resources? Who do I border?

IT'LL END IN TIERS

How the factions rank up

S TIER	 Egypt Chariots are OP.
	 Parthians Kite your enemies to death.
A TIER	 Britons Screaming, blue and naked.
	 Macedonians Very, very long spears.
B TIER	 Greeks Like Macedon but worse.
	 Carthage The imperial also-ran.
C TIER	 Gauls There are loads of them.
	 Thracians Mix of Greeks and barbarians.
D TIER	 Numidians Too many camels.
	 Scythians Never get off their horses.
E TIER	 Spain Don't even get a historical name.
	 Pontus Don't make me play Pontus.

NEED TO KNOW

WHAT IS IT?
Remastered Roman retro strategy

EXPECT TO PAY
£25

DEVELOPER
Creative Assembly,
Feral Interactive

PUBLISHER
Sega

REVIEWED ON
Windows 10, AMD FX
8350 Eight-Core,
Radeon RX 580, 24GB
RAM

MULTIPLAYER
Yes

LINK
totalwar.com

DONE ROME-ING

It's a large-scale strategy game that for its time was huge but is pretty small by modern standards. It has fewer unique factions, even with unplayable ones unlocked by the remaster, than modern games. The simplicity ends up being a real strength. Pick a faction, learn of a handful of little towns scattered around the map, and go conquer them. It's just more bite size and rewarding over shorter periods than any modern *Total War* is.

With two huge campaign setups between the original game and the *Barbarian Invasion* expansion there are a lot of ways to conquer the ancient and early medieval worlds. There's also the Alexander campaign from that expansion, if you want a more streamlined experience. It's a lot of value for money if you're enjoying the gameplay.

Making these old campaigns easy and quick to play with a much-updated and modern user interface is where *Total War: Rome Remastered* really, really shines. Where it doesn't shine? The real-time tactical battles. They were great in 2004, but today's standards are much higher. They're just clunkier, simpler, and less dynamic than you want them to be.

The AI tries so hard to do its best to fight you off, but it's still just as easy to trick it out of position or hoodwink it with obvious feints. There's a complexity to the interaction of unit types that's very fun when it shows up, but the campaign AI just isn't very good at producing armies of higher-tier units for you to fight. The featureless battlefields don't help and were the finger on the scale that made me click the autosolve button more often than not. ■

PC GAMER VERDICT

Rome Remastered is a competent remaster of a great strategy game, but it can't compete with its modern heirs.

72



Roman infantry throw javelins at closing Britons.



The revamped campaign map looks quite good.



A force of early Romans defends a town from Gauls.



A horde of Gauls do what they do best.



Legionaries charge a hoplite phalanx.

MASK OFF

Turning back the platformer clock in
CRASH BANDICOOT 4: IT'S ABOUT TIME. By Oscar Taylor-Kent

Everyone's favourite jorts-champion has only recently become a PC gaming convert, but he's hit the ground running and is looking better than ever. This is a gorgeous cartoon platformer that plays like something out of the genre's golden age, but with welcome quality of life improvements.

Time and space have been shattered, meaning that Crash and Coco need to run through quirky takes on real-life historical settings, from pirate ships to jazzy New Orleans swamps. Most of the time you're running away from the camera, on pretty linear paths – though as you'd expect it changes to a side-on camera at times, and running towards the screen for the odd chase sequence. New default options give you an easily readable shadow to make jumping extra clear, and a modern option ditches lives in favour of just tallying your deaths.

It's called *Crash 4* for a reason, picking up the torch of the original trilogy and evolving it in a way that legitimately makes sense. This isn't a cynical nostalgia grab like *Sonic 4*. The big new additions here, the Quantum Masks, change up the platforming. These give you the power to hit a button to toggle certain glowing platforms on or off; to slow down time; switch gravity onto the ceiling; or give you a spinning top super double jump. The

masks are locked to sections of a stage, so every time you use them is a neatly designed challenge.

'Challenge' really is the word the further you get into the game, and some later platforming challenges will have your own eyeballs spinning with rage. But the exhilaration you

feel when you pull it off is like nothing else, and rarely is your untimely demise hard to understand – though some hazards can blur into the busy environments if you're not cautious. Thanks to an uncapped framerate,

I'll begrudgingly admit that most of my deaths felt like my own fault.

I'll admit that most of my deaths felt like my own fault

CREW CONTROL

Turning back the clock to re-conceptualise a *Crash* sequel has mostly paid off. But, just like some of the less-favoured original sequels, *Crash 4* does stumble upon some more lacklustre additions. Our furry friend has fallen for the inexplicable allure of platformer grinding, and it's not well implemented, especially as you try to collect everything you can.

NEED TO KNOW

WHAT IS IT?
A return to Crash's glory days (with a return to numbering to match)

EXPECT TO PAY
£5

DEVELOPER
Toys For Bob

PUBLISHER
Activision

REVIEWED ON
AMD Ryzen 7 1700X
Gigabyte RTX 2080
Super 32Gb RAM

MULTIPLAYER
2 (offline, controller passing)

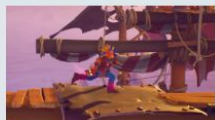
LINK
bit.ly/39R1x6m

Beyond the standard Crash and Coco gameplay come Tawna, Dingodile, and Neo Cortex. They still platform, smash crates, and collect gems as they rush to the end of the stage, but have their own gadgets that give neat mechanical twists. Beyond a handful of mandatory stages, their optional timeline missions take place at the same time as a level you already played as Crash. Unfortunately, when you reach that point in the level, the new character tag teams off into Crash, where you just start replaying a more challenging portion of the stage. When I wanted to play as a different character, I wanted to play as a different character, not return to a previous stage for part of it. It just feels a bit exhausting.

Which is bizarre, as it doesn't need the padding – there's already a wealth of challenges to complete, including alternative NVerted versions of every stage in the game. On top of all of those, you have hidden Flashback challenge levels, time trials, hidden gems, and the devious task of destroying every crate (which feels a tad *too* masochistic in most stages, even when compared to the original trilogy).

Hitting the coveted 106% is tough. But that's what you want from *Crash*. Sometimes it can be a bit too frustrating, much in the way the series has always been, but often those challenges are optional. You don't have to smash every crate. You don't have to make that tricky, gravity-defying leap just to snag those extra wumpa fruit. You don't have to shave a few seconds off your best dash through a stage. But you want to, don't you? Just because it's there, and sometimes it just feels *fantastic* to crash and burn. ■

CREW CONTROL *How the best of the rest play...*



TAWNA

Not the same Tawna from previous games, but a more kickass version from another dimension. Her hookshot can smash crates and enemies from a distance



DINGODILE

Half-dingo, half-crocodile, all-vacuum lover. His big back-mounted tube can suck up crates, including TNT, which can then be shot as a projectile.



NEO CORTEX

This villainous doctor is responsible for Crash's mutations. Armed with a laser, he transforms foes into platforms of a solid or bouncy variety, and can do a floaty headbutt.

PC GAMER

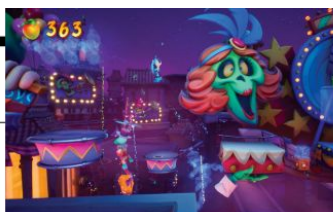
VERDICT

There's the occasional stumble – there always was – but this platformer plays slickly and looks even better.

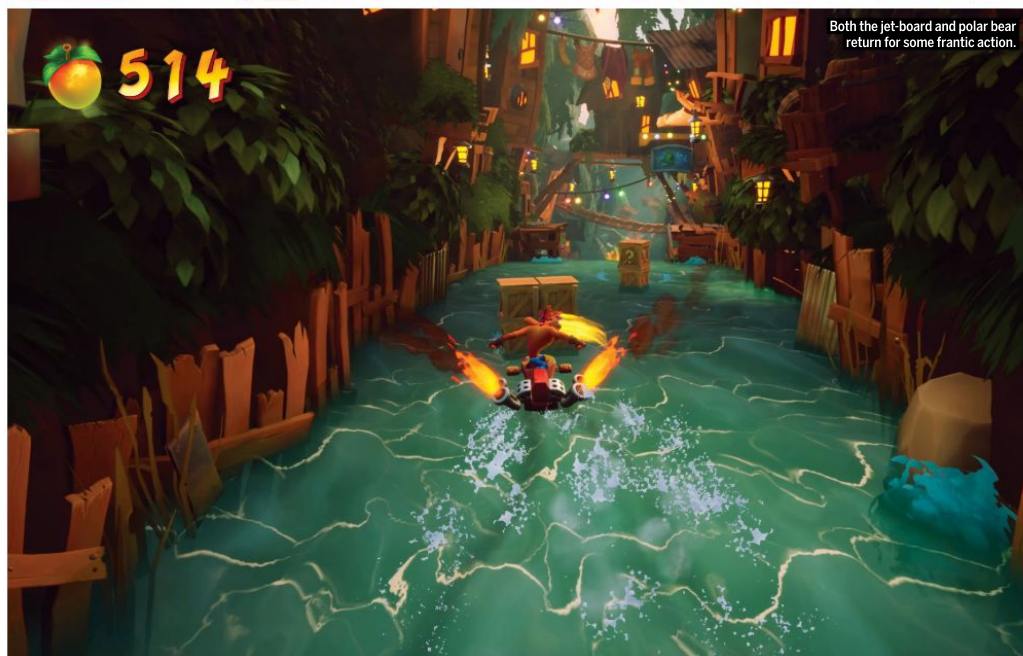
79



The huge arrows mean you can wall run, so you don't get confused.



Both the jet-board and polar bear return for some frantic action.



This giant masked ghost shows up early, and is a great design to run from.



Every level's bonus stage has plenty of tricky crates to collect.

LABOUR OF LOVE

IT TAKES TWO is a brilliant co-op adventure that runs wild with variety. *By Rachel Watts*

It's not often you see the rom-com genre explored in games. Everyone knows the formula: a light-hearted story about a pair of lovers seemingly meant for each other, but kept apart through kooky circumstances. The interplay between the two main characters is at the core of these stories, and it's a relationship that's difficult to translate into games. But Hazelight Studios has taken the genre head on in *It Takes Two*, a co-op adventure to be played as a pair.

Cupid's arrow has easily hit its mark here, and the coupling of a romantic comedy and couch co-op gameplay is a match made in heaven. But *It Takes Two*'s story of a couple trying to reconnect struggles to capture the whimsy and charm of the genre. You and your co-op partner play as parents Cody and May, who have been magically transformed into dolls after breaking the news to their young daughter that they're divorcing. The reason behind their transformation is the eccentric Dr Hakim, a moustachioed, anthropomorphic relationship-advice book who has devised a plan that will make the couple reconcile their differences through the power of cooperation. Dr Hakim's cheesy plan is a method the couple is less than happy about, but at the promise of returning to their human bodies, the duo need to traverse multiple worlds to break the spell.

A couple breaking the news of their divorce to their daughter isn't quite the set-up I imagined for a happy-go-lucky romantic comedy to

begin with, but *It Takes Two*'s world-hopping adventure brings a lightheartedness to the topic. In your bite-sized doll-form, you'll be exploring inside and outside the family's home, but each area has a magical-realist twist.

The duo need to traverse multiple worlds to break the spell

Worlds are dense with mini-games, puzzles, platforming, and rail grinding, and packed with action sequences all with cooperation at their core. Throughout our time with *It Takes Two*,

my partner and I have tinkered with time inside a cuckoo clock, escaped from a lair of ferocious moles, travelled on the back of a giant ghostly catfish, and had a fistfight with a squirrel on top of an aeroplane. It's like the game has been made for someone with the attention span of a toddler.

Each level introduces a new mechanic designed around that area's world, but even then *It Takes Two* is constantly switching up how that mechanic is used. The first location you get to explore is the family's garage, and Cody and May are given a hammer and nails to help them

NEED TO KNOW

WHAT IS IT?

A chaotic two-player adventure about a squabbling couple who learn the art of cooperation

EXPECT TO PAY

£35

DEVELOPER

Hazelight Studios

PUBLISHER

EA

REVIEWED ON

AMD Ryzen 5 3600, 8GB, AMD Radeon RX 5700 XT

MULTIPLAYER

Two-player co-op

LINK

ea.com/games/it-takes-two

through some puzzle platforming. Cody can fire nails into a wall so May can swing on them with the hook of the hammer, but this is just one way these tools can be used. Sometimes, May will have to break some glass bottles blocking the way, or Cody will have to fire a nail into a target to keep a revolving platform in place. There's a lot to get stuck into, and before you can get sick of a particular mechanic, the game quickly switches to something new. I haven't even talked about the circuit breaker puzzles, or the brilliant giant sentient vacuum cleaner boss fight.

COUPLES THERAPY

There are attempts at exploring why the couple has come to the decision to divorce, but it only really skirts the surface of any emotional climax. It never gets any deeper than the pair's bickering, their differences boiling down to one being a workaholic and the other not having any passion in their life and occasionally forgetting to take out the trash.

Understandably, Hazelight probably wanted to keep things light-hearted to match the genre, but I think wanting to stick so strictly to the rom-com genre of having a happy fairy-tale ending instead of a more nuanced exploration of divorce and parenthood is a miss from Hazelight.

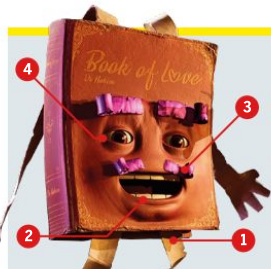
Still, it's refreshing to play a co-op game that isn't so arcadey, and this is one of the best story-driven multiplayer games on PC, sitting comfortably next to *Portal*'s two-player campaign. One of my favourite co-op experiences of all time is the quietly introspective *Journey*, and if that's made special by the fact that you don't speak a single word, then *It Takes Two* is opposite – its strength is that it never has a quiet moment. ■

PC GAMER

VERDICT

An excellent co-op adventure that doesn't take itself too seriously – but unfortunately that's where it falls short.

80



LOVE GURU

Here's why I'll be seeing Dr Hakim the eccentric book in my nightmares

1 HIPS

The constant gyration of his hips makes me incredibly uncomfortable.

2 TEETH

Why would a book need human teeth? Deeply unsettling.

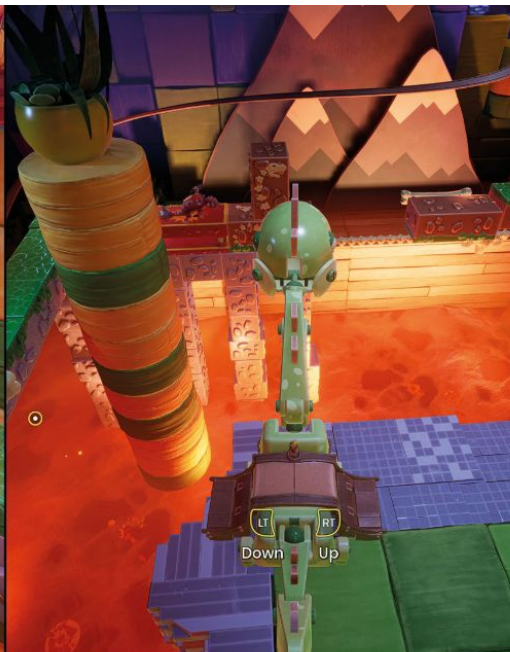
3 MOUSTACHE

It's menacing, the kind of facial hair a super-villain would have.

4 EYES

There's no life behind them at all. It's like he has no soul in his pages.

Scorching hot lava in a child's playroom?
Although it does set the scene.



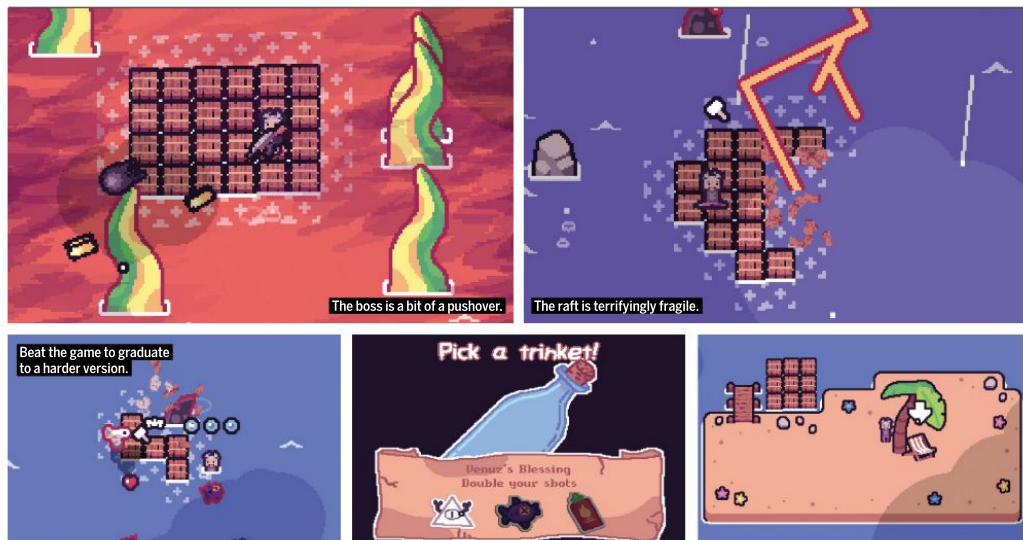
It Takes Two's playfulness with
scale is a highlight of the game.



Cody and May:
pocket-sized edition.



Would you believe me if I said that you
fly on fidget spinners in this world?



SEA HERE

Keeping my head above water in salty roguelike **SUPER RAFT BOAT**

You build your own dungeon in the hectic *Super Raft Boat*, which takes place on the open sea – a terrible place. You extend, and repair, a raft by plonking down endless bits of driftwood, while soggy terrors including sharks, fish and ghosts advance relentlessly towards you.

Your main method of defence is, naturally, a gun, which you fire in a typical twin-stick manner. Shoot the gulls and leaping fish before they can take a bite from you. But kill the sharks and the *giant* sharks before they can chomp on your raft, tearing chunks of the floor out of your floating dungeon.

The shooting is fine: very screenshakey, if a little lacking in aural *oomph*. But the flooded-world setting is a veritable breath of fresh sea air. Clouds drift overhead the gleaming ocean, and later storm clouds and obscuring mist are introduced. It's an exciting, transporting setting, particularly when it's been so long since many of us have seen the actual ocean.

One interesting fact about the ocean is that there's not a lot of land in it. Instead you have your raft: a hodgepodge island that's constantly growing and shrinking, as you build

and the sea beasts tear it to bits. Space is at such a premium on your raft that you feel every piece of damage keenly, be it a single bite from a shark, or a great big gouge from a bolt of lightning.

It's when the shark-fin hits the fan that *Super Raft Boat* becomes super interesting. Can you remember the last roguelike where you were undone by... a rock? No, they're *dreadful*. If one happens to float towards your raft – and you don't have the upgrade that lets you destroy it – all you can do is watch in horror as it tears a path straight through the middle of your home.

So, you repair. You make your raft into a big rectangle, or whatever shape you prefer. You could even build *multiple* rafts, and swim between them. But with the raft a strict necessity – although its function varies from character to

A hodgepodge island that's constantly growing and shrinking

NEED TO KNOW

WHAT IS IT?
An action roguelike set on a fragile raft

EXPECT TO PAY
Free

DEVELOPER
Shattered Journal Games

PUBLISHER
In-house

REVIEWED ON
AMD A4-6300@3.7GHz,
6GB RAM, GeForce GT 610

MULTIPLAYER
No

LINK
bit.ly/SuperRaft

character – you'll need at least a stitch of wood if you're to reach the island and end the game. Once there, you can either recline in the deck chair (your cause of death is given as 'relaxation'), or hop aboard a brand new raft for the new game plus.

DON'T ROCK THE BOAT

Super Raft Boat has a small scope for a roguelike: there is only one boss fight, and no persistent unlocks other than the two bonus characters and a few skins and weapons. I'm not complaining, as this might be the first time I've finished a roguelike, while those extra characters change the game dramatically.

There's Chauncy the shark, who can only stay out of water for so long, and Roboto the floating 'bot, the only character who can shoot while away from the raft. Every character has their quirks, and their own particular firearms. Even with its small scope, it should be a while before you tire of repeating those same four levels. ■

PC GAMER

VERDICT

A small but perfectly formed roguelike that offers good enough gunplay and nail-biting raft management.

81

RUN, RABBIT, RUN

Grinding crystals in the athletic **MISKA'S CAVE**

In endless runner *Miska's Cave*, you can also endlessly run on the ceiling, by bounding gracefully from the bottom to the top of screen. The game's rabbit little hero is more acrobatic than Mario, even before you unlock the double and triple jump, which let you switch direction while the bunny is in mid-air.

This athleticism gives *Miska's* a different flavour from other endless runners, which tend to focus on pits and obstacles to trip you up. *Miska's* is all about leaping, and all about its enemies, which come in waves and fly menacingly towards you. A quick slice is all it takes to knock them back and eventually kill them, but getting the timing right is another matter. *Miska's Cave* is quick: runs can be over in a matter of seconds, depending on how unlucky you are in the random drawing of enemies.

Helping you out is a giant pile of unlockable upgrades. By exchanging crystals you can improve your character, buy higher difficulties and different modes of play. Not a fan of endless running? Have a go at these ready-made challenges instead. Crystals are earned in a number of ways, including taking bets from a certain character. And, by God, you need them, as *Miska's Cave* is utterly in love with the grind.

The game only really becomes fair once you've ground (grinded?) to embiggen your health. Similarly, I saved up to buy normal difficulty – I found this blisteringly tough – only to find I had to buy yet another upgrade to return to easy.

Grinding unfortunately breaks the spell for me. Others may disagree. But beneath that crust,

there lies a nifty, rewarding runner about an acrobatic rabbit. ■

62



NEED TO KNOW

EXPECT TO PAY
Free

DEVELOPER
Soulflee

LINK
bit.ly/3uQCGYI

PAPTRAP

Snapping celebs in nightclubs in **ROBORAZZI**

Did you know that robots have paparazzi? Every time C-3PO stumbles out of a nightclub, there's a tin-man scumbag waiting with a telephoto lens. Johnny 5 is enjoying a holiday in Spain, when a pap trundles up the beach and takes a photo of his saggy robo-bod. In *Roborazzi*, you are a robot paparazzi, and it's actually a pretty stressful job.

For one thing, you can't stop. In every nightclub-set level, you're given a list of targets to take photos of (funkily dressed partygoers, or sometimes parts of the scenery). However, as your character won't stop moving – as you shunt them around the gaff with WASD – it can be tricky to locate your mark, and to keep them in shot while you work your camera magic. Take a pic of the wrong person, or stumble into the shot yourself, and you'll lose a chunk of

health. And there isn't all that much health floating around.

Because a roborazzi charges its batteries by taking photos of celebrities (it's all there in the lore, trust me), the other wrinkle is your dwindling life bar, which depletes as time goes on. While you recover health for every successful snap, this is still a challenging game that I had to restart a number of times, so I was grateful that the celebs were randomised every time. Beat the game and you can replay to improve your score, although more likely you'll smile, delete the folder, and move along to your next game.

That's not really a complaint in a landscape teeming with amusing curios. But while it has your attention, this is a novel, fairly stressful pixel hunt that takes its robot-paparazzi theme and does it a certain amount of justice. ■

70



NEED TO KNOW

EXPECT TO PAY
Free

DEVELOPER
Kultisti

LINK
kultisti.it/ch.io/roborazzi



DRAKE EXPECTATIONS

Overconfidence: still the biggest killer in **DARK SOULS REMASTERED**

Sometimes it's nice to go back to places that hold a special place in your heart, isn't it? Quaint French seaside towns you holidayed in as a child. The village in which you grew up. The toilet labyrinth where you spent countless hours fighting diseased rats, cursed lizards, and wobbling stacks of slime, only to discover the next area was *even worse* and all suffering is relative. Thank you for these special memories, *Dark Souls*.

I had planned to see how far I could get without dying, in an act of *Souls*-defying mastery. I've been here before, Miyazaki, and I know all your horrid tricks. I'm even arrogant enough to take on the Black Knights, parrying and riposting with a calmness I literally never felt on my first run. I won't be too hubristic – Havel can jog on, for instance – but I'm supremely confident I'll at least reach the Capra Demon without any embarrassing deaths.

You need to know that none of the deaths on the Taurus Demon count. I fell off the bridge twice – not a proper death – and died twice overcomplicating things. If anything, I'm actually *too good* at *Dark Souls* to fight the Taurus Demon. He just doesn't realise it yet. I'm trying to counter-roll and outmanoeuvre him,

when all I really need to do is waltz in and batter him. Still, these not-deaths, had they happened, would serve as a reminder not to get overconfident. I'm not going to do anything rash yet, though. Imagine if

I was desperate enough to get the Drake Sword!

I'm actually too good at *Dark Souls* to fight the Taurus Demon

SOUL SURVIVOR

OK. I got Drake Sword. But at least I used the cool, speedrun method instead of just shooting his arse-tail for 20 minutes. I make no

apologies. Asking me to ignore it is like telling a homeschooled teenage boy not to look at naked wobblers during double geography. More than anything, it's a form of nostalgia – a warm, reassuring throwback to one of the few times in *Dark Souls* where you don't feel like a prey animal. It does ruin some fights – the Bell Gargoyles, for example, go down like

NEED TO KNOW

WHAT IS IT?
A Fighting Fantasy book you actually have to play without cheating

EXPECT TO PAY
£35

DEVELOPER
QLOC, FromSoftware

PUBLISHER
Bandai Namco

REVIEWED ON
Intel Core i7-7700 CPU @ 3.60GHz, 16 GB RAM, NVIDIA GeForce GTX 1070, Windows 10

MULTIPLAYER
Yes

LINK
bit.ly/2Qwwo1g

a toddler's block tower – but it's a fleeting thing. By the time I reach Sen's Fortress I know the sword will be as much use as two-legged trousers on a Titanite Demon.

That's a handy way of looking at the whole experience. Starting from scratch is a different experience – Taurus Demon non-deaths aside – but I know the clock's ticking. Before long I'll reach a fight I can't breeze through, even with Ol' Drakey on my hip. And looking up at The Duke's Archives while I'm hours away, down in the bowels of the Undead Parish, is a reminder of how far *Dark Souls* takes you. There's something terrifying about seeing how you've got to go, and majestic about looking back and seeing where you've been. I can't think of another journey in games that makes me feel like I've grown and suffered as much as *Dark Souls*, and even cheating the first few hours with the worst kept secret weapon in games can't change that sense of achievement. ■

PC GAMER VERDICT

Darks Souls Remastered proves you can actually go home again. It's just rotten and full of monsters out to kill you.

91

CONQUEROR WORM

Run right and suffer: the **INSIDE** story

It's hard to think of many things as intuitive as *Inside*. It's one of those games you understand in the first five seconds precisely because it tells you bollock-all. Run, jump, move things, don't get bludgeoned by baddies. There's rarely ever any confusion.

The pacing of *Inside* makes it a hard game to stop playing. The puzzles roll elegantly into each other in a way that's incredibly morish – there's some simple part of my brain that just loves being rewarded with progress, like a rat in a patronising maze. My desire to progress is compounded by the endless suffering of my nameless protagonist, too. Some games spend hours setting me up with a compelling reason to keep playing, and don't always succeed. *Inside*, however, manages to captivate me with a story that starts as 'everything is terrible, run right' then

elevates it with some unexpected weirdness. The length helps. Five hours is enough of *Inside*'s world. I'm not sure I could take more.

There's a knowing brutality to *Inside* that at times veers into the blackly comic, but it always retains its power to shock. Someone at PlayDead has spent a disturbing amount of time making animations of kids being squashed, shattered, or savaged by dogs. It's atmospheric, too. The sound design adds richness to the game's limited palette, with rumbling water, snarling dogs, and thrumming machines. In the wrong hands it could have been bleak, but any game that lets me solve a puzzle by flinging chicks at a hay bale clearly isn't taking itself too seriously. There are some areas that drag, but *Inside* still hangs together well enough to provide a short, nasty shock with a mind-bending ending. ■

82

When you're in the queue for Lidl on Saturday morning.



"Cute chicks! Hope I don't have to thresh them."



NEED TO KNOW

EXPECT TO PAY
£15

DEVELOPER
Playdead

PUBLISHER
In-house



DICEY DUNGEONS

The plan this month was to pick dark games to go with the theme of under-places. But as far as dungeons go, this one is deliciously bright. It's part gameshow, part RPG, part RNG, part CCG, which is enough acronyms that I'd hit my word count if I spelled them all out. And while that disparate mix should stitch together into some flesh-pit abomination, *Dicey Dungeons* is just lovely. It's crisp and intuitive, and, if anything, mixing all those elements together makes challenging things more palatable. Think of it like hiding grandpa's medicine inside a key lime pie. The constant weirdness and delirious selection of enemies is like you've eaten the drugged pudding yourself. ■

84



THE CAVE

Not every danger is clearly labelled. There's no combat in *The Cave*, and very little in the way of peril – you can't die, and doomed interactions with monsters always result in a quick restart. But the biggest antagonist here is a rope. You will grow to hate the rope. The rope is your enemy. Not because it's dangerous, but because it's so slow you could grow a lustrous beard in the time it takes to climb one. And in a game that requires lots of backtracking, that can quickly suck your will to live. It's one of a few unimaginative stumbles in *The Cave*, a game that otherwise functions as a pleasant, mildly-amusing puzzle platformer that never goes as deep as you hope. ■

67



THE LEGEND OF BUM-BO

Yes, it sounds like the sort of thing you'd secretly rename your little brother's diary as a prank. And yes, it's as relentlessly foul and lavatorial as *The Binding of Isaac*, but despite some thoughtful match-four puzzle mechanics and unique cardboard-cutout presentation, *Bum-Bo* doesn't inspire the same devotion as Edward McMullin's more well-known trip around the u-bend. Whereas *Isaac* encourages me to dive back in after every failure, I'm less inclined to do so after 20 minutes spent lining up faeces. ■

70

IF I HAD SOMEWHERE TO LIVE...

I COULD GO ANYWHERE IN LIFE



When Abi's mum died, life got tough. She didn't get on with her dad and the arguments became violent. Abi felt her only choice was to leave home. With just the clothes on her back, and no idea where to go, she ended up sleeping on the streets in the freezing cold.

Right now, you could give a homeless young person like Abi somewhere to start their future

Abi's life changed when she was given a room at Centrepunkt. A safe place to sleep and recover. A place to develop the skills and confidence she needed to rebuild her life – and leave homelessness behind for good. Now, Abi believes she can go anywhere.

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Name(s) of Account Holder(s) _____	
Bank Sort Code: - -	Account Number:
Instructions to your Bank or Building Society: Please pay Centrepunkt Direct Debits from the account detailed in this instruction, subject to the safeguards assured by the Direct Debit Guarantee. I understand that this instruction may remain with Centrepunkt and, if so, details will be passed electronically to my Bank/Building Society.	
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VAT registration no. 649 345 018.



HARDWARE

GET THE PC YOUR GAMES DESERVE



96

GROUP TEST

The very best lightweight mice.



102

BUYER'S GUIDE

Top builds to match your budget.



100

TECH REPORT

How to go from 50 fps to 500 fps in one click.

GROUP TEST

LIGHTWEIGHT GAMING MICE

The key to competitive gaming success? A lightweight mouse... maybe. *By Josh Brown*

Though we've come quite a long way since hefty rubber balls traversed freebie magazine mousepads, even the most popular gaming mice still have a bit of heft to them. Hence why the term 'lightweight' has become the major buzzword for manufacturers looking to flog the latest line of top-tier gaming mice in the past couple of years. Nowadays there are heaps of lightweight gaming mice available, ready

to usurp your desktop from the classics.

When it comes to shedding a few grams each company has taken a slightly different route, resulting in multiple ultra-lightweight gaming mice best suited to all manner of player and grip style. Whether you're looking for cut-outs that increase airflow and lighten the payload, or a wireless option that opts for style over fluid useability, there's an ultra-lightweight gaming mouse out there for everyone right now.





Aerox 3 Wireless

STEELSERIES £80

The best lightweight wireless gaming mouse

1 Steelseries has hit a sweet spot with the Aerox 3 Wireless. The honeycomb perforations spread further than most, giving even the tops of your fingers a breeze, and it features a coarse outer shell for those who need the extra grip. The otherwise beautiful RGB trim reveals visible circuitry which, depending on taste, can cheapen the overall look.

Small hands and a claw grip will go a long way here. Large-handed palm grip gamers might find themselves dragging their digits. Even when opting for that slimmer profile, though, the Aerox 3 Wireless managed to provide

Bluetooth connectivity on top of its lightning-fast 2.4Gz mode.

Paired with a physical CPI button just above the mouse wheel, RGB lighting, a mammoth 200+ battery life (with fast charge and USB Type-C), and an included receiver hub and cable, there's a degree of flexibility here that other wireless options in its grade just can't match. And it's only three grams heavier than the other wireless mouse included in this group test.

PC GAMER VERDICT

- Great battery life
- Breathable casing
- USB-C charging

SPECS WEIGHT: 66g / CPI: 20,000 / POLLING RATE: 1,000HZ / SENSOR: OPTICAL / INTERFACE: WIRELESS, USB, BLUETOOTH 5.0 / BUTTONS: 6 / ERGONOMIC: RIGHT-HANDED

Makalu 67

MOUNTAIN £60

Great for larger hands

2 The Mountain Makalu 67 is a stylish piece of kit. It's also the chunkier option on this list, making it a great choice for the bigger-handed player looking for an ultra-lightweight clicker. Its large stature and heavily curved body should suit palm grips the best, but claw grip players shouldn't notice any major downsides.

There's a deeply satisfying click from the two well-pronounced thumb buttons, which sit relatively high up the body, giving your thumb plenty of space to work with. The cable is loose and light enough to whip around no problem, but the long

rubber stem pinning it to the chassis might snag on a mousepad with any sort of raised edge, like from a USB hub.

It would have been nice to see the breathable perforations stretch to the thumb and finger areas as well, but overall, the Mountain Makalu 67 is a solid choice, and one that's far lighter than it looks. It even features handy indentations to make replacing the mouse feet a breeze when the time comes.

PC GAMER VERDICT

- Large but lightweight
- Gorgeous RGB around the wheel
- Plenty of grip

SPECS WEIGHT: 67g / CPI: 19,000 / POLLING RATE: 1,000HZ / SENSOR: OPTICAL / INTERFACE: USB / BUTTONS: 6 / ERGONOMIC: RIGHT-HANDED

THERE'S NO WAY A
TENSE GRIP WILL
CRUSH IT LIKE A CAN

MM720

COOLER MASTER £48

The travel-friendly ultra-lightweight option

3 The Cooler Master MM720 is by far the smallest of the bunch here, meaning it's also the lightest at a mere 49 grams. It features the trendy honeycomb design but swaps a long body for a stubby design you could mistake for a cheap travel mouse you'd find grossly overpriced at an airport technology store.

Its smooth, plastic finish isn't the most premium around, but there's no way a tense grip will crush it like a can. And despite the perforations, it's IP58 water-resistant, so dropping a gamer beverage over this thing won't destine it for the trash heap.

Its comparatively tiny footprint isn't just a by-product of Cooler Master aiming for that ultra-lightweight buzzword: there's a method in the miniature form-factor in that it's primarily designed for a claw grip. There's no reason a palm or hybrid grip won't work, but prepare for your digits to curl over the clickers if that's the case. Either way, the much appreciated finger rest on the right-hand side should help keep things comfortable.

PC GAMER VERDICT

- Tiny footprint
- Appreciable lighting
- Very light

SPECS WEIGHT: 49g / CPI: 16,000 / POLLING RATE: 1000HZ / SENSOR: OPTICAL / INTERFACE: USB / BUTTONS: 6 /
ERGONOMIC: RIGHT-HANDED

G Pro X Superlight

LOGITECH £130

A good wireless option that can be great

4 Logitech has a storied history in the PC peripheral space, so it should come as no surprise to see them enter the ultra-lightweight game. The Pro X Superlight is about as sleek as stylish as they come. Devoid of RGB, it wouldn't look out of place in an office. Its shell is perhaps too smooth, but at a mere 63g it manages to weigh less than even most wired options while packing a 70+ hour battery.

By far the best part of the Superlight is its wireless functionality. Sure, the battery of this particular pointer could run dry at a moment's notice, but by

going deeper into the ecosystem, Powerplay wireless charging can keep it going indefinitely for a bit of extra cash.

The side buttons may be a little too mushy for some players, but had it not been for the Steelseries, this would be the wireless option to beat. It's just a shame Bluetooth support may have been cut to save on some weight, which leaves its connectivity options lacking compared to its rivals.

PC GAMER VERDICT

- Comfortable
- Stylish
- Stellar sensor

SPECS WEIGHT: 63g / CPI: 25,600 / POLLING RATE: 1,000HZ / SENSOR: OPTICAL / INTERFACE: WIRELESS, USB /
BUTTONS: 5 / ERGONOMIC: RIGHT-HANDED

4



5



6

WHAT MAKES A GREAT MOUSE SENSOR?

Hyper-accurate sensors play a big part in gaming mouse design these days. At higher refresh rates and resolutions, the need for next-generation sensors exists to ensure players aren't held back by the very thing designed to replicate their movements. Sensors need to be capable of maintaining accurate, low-jitter operation at high speed. There are a few key metrics to look out for: CPI (counts per inch, often inaccurately described as DPI), which determines how many times a mouse reports your movement per inch; acceleration, not to be confused with software acceleration, is the rate at which the mouse will function with force; and lift-off distance, which tells you how far you could lift your mouse off the mat while retaining a reading. Something to consider when deciding which mouse is for you.

Model O

GLORIOUS £66

The original ultra-lightweight king

5 The Glorious Model O takes cues from Razer's iconic designs and packages it into what feels like a more reliable chassis. It features contoured left and right-click buttons, an absolutely fabulous matte (or gloss) finish that's silky smooth to the touch, and a modestly angled body that will offer solid support – with the correct grip, of course.

The relatively low profile of the Glorious Model O might have palm grip players scraping their wrists a little too much for comfort, while those with larger hands might struggle to find the space for their thumb to sit

without mashing the two left-side clickers. Its body screams quality, but when you're not rubbing your palms all over its smooth skin like that of a fidget toy, the light scratching of the front feet might just get into your head.

It's not the smoothest mouse on the mousepad, but that could be down to its four comparatively small feet. And unless you spring for the smaller Model O-, it's not actually the lightest mouse around these days.

PC GAMER VERDICT

- Well built
- Zero tracking issues
- Smooth yet grippy

SPECS WEIGHT: 67g / CPI: 12,000 / POLLING RATE: 1000Hz / SENSOR: OPTICAL / INTERFACE: USB / BUTTONS: 6 /
ERGONOMIC: RIGHT-HANDED

Viper 8KHz

RAZER £52

A snappy sensor you can count on

6 Razer slides into the ultra-lightweight gaming market this year with the wired Razer Viper 8KHz. The name is really just a fancy way of saying the mouse reports its position to your computer a whopping 8,000 times per second. Is it noticeable in game? Not really. But it's a reassuring claim to fame that should reduce figurative mouse latency to a frankly ludicrous low.

The fast sensor is housed in a solid plastic chassis that's segmented in a cyborg-esque fashion. And it looks smoother than it actually is. Lay your palm over the low-profile body and

you'll have a slightly textured grip and curved mouse buttons to keep you in place. With five CPI profiles of the box, the only real reason to need Razer's own software clogging up your machine is to set a reachable toggle, as it's inconveniently placed underneath.

The whole package doesn't feel quite as high quality as some others, but its ambidextrous design makes it the most well-rounded.

PC GAMER VERDICT

- Ambidextrous
- Unique cyborg design
- Groundbreaking sensor

SPECS WEIGHT: 71g / CPI: 20,000 / POLLING RATE: 8,000Hz / SENSOR: OPTICAL / INTERFACE: USB / BUTTONS: 6 /
ERGONOMIC: AMBIDEXTROUS



Nvidia's 20-series cards, from 2016, are largely associated with ray tracing, but also brought mesh shader support to the desktop.

THROWING SHADE

Or how to go from 50 fps to 500 fps with one click

There's some benchmarking software you may have heard of called 3DMark. It's on Steam. Recently, it updated its benchmarks to include the 3DMark Mesh Shader Feature Test, which requires a GPU that's compatible with DirectX 12 Ultimate. The test runs twice, once with mesh shaders disabled, then again with them switched on. In 4K, using an RTX 3080 card, we got a framerate of around 50 fps for the first run, then something closer to 500 fps for the second, with no perceivable difference in what was displayed on the screen. How the heck did that happen?

'Shaders' is a term that's been thrown around in videogames for a while now, and while it seems straightforward it's not exactly obvious. Shaders are programs that run on programmable GPUs (that's most of them) that control the levels of light, dark, and colour in rendered images. They're a major part of modern games' lighting effects, and there are whole shader languages for graphics programmers to, well, program graphics in.

Pixel shaders were the ray tracing of their time – players of *The Elder Scrolls III: Morrowind* in 2002 may remember being asked whether they wanted to activate pixel shaders. They only worked if you had a high-end graphics card, there was a bit of a performance hit, but they made the water look

awesome. Just like ray tracing, then. Modern pixel shaders do a lot, from bump mapping to shadows to the motion blur you turn off in every game.

What they were doing was calculating lighting effects on a per-pixel basis rather than at the triangle level. Before there were pixel shaders, there were vertex shaders (vertices in graphics-speak are different to those in geometry, where they are the point at which two lines meet – in graphics, they can carry more information, such as the spatial position, colour, or even texture coordinates that can be used to turn a complex polygon into a triangle mesh) which transform a 3D position into a 2D coordinate plus data for the Z-buffer that holds depth information. Shaders can manipulate the values for position, colour and texture, allowing the programmer to move, recolour and light the 3D models in a scene.

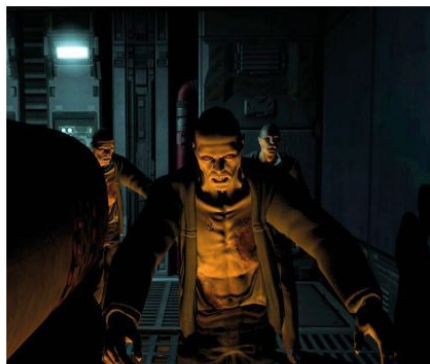
There are more shaders too, from the geometry shaders that came aboard DirectX 10, the tessellation shaders from DirectX 11, to the ray tracing shaders in DirectX Raytracing that gaming is still getting to grips with.

Mesh shaders, however, arrived with AMD's Vega architecture – the one that's behind cards like the Vega 64 and the Radeon VII. They're a part of DirectX 12 Ultimate, and Nvidia was quick to add them to its toolkit with the Turing architecture that powers 20-series cards. Both manufacturers have moved on a generation since then, so the technology is now embedded in our graphics hardware.



Smart access

There's a parallel here with Nvidia's Resizable BAR (called Smart Access Memory by AMD). Traditionally, CPUs could only access 256 MB of VRAM, so all instructions had to be passed through serially, in chunks of that size. RBAR/SMA lets the CPU access all the VRAM, parallelising and speeding up communication over the PCIe bus, reinventing old ways of doing things.



FAR LEFT: *Id Tech 4*, the engine behind *Doom 3* (2004) and *Prey* (2006) is notable for introducing per-pixel lighting.

LEFT: *Comanche 4* was an early pixel-shaded game, coming out in 2001.

HOW IT HELPS *Making the most of mesh shaders*



1 BOTTLENECKS

Nvidia's Asteroids demo shows the benefits of mesh shading moving bottlenecks from the CPU to the GPU.



2 ASTEROIDS

There are 350,000 asteroids here, each 10 million triangles. But with mesh shading, only 50 million are drawn.



3 DISTANCE

The asteroids are separated into six LOD categories, depending on how close they are to the player.



4 TRIANGLES

Here, the asteroids are coloured depending on their level of detail, with closer rocks using more triangles.

Mesh shaders bring a few different things to the graphics processing party, including efficiency gains. By dividing chunks of an object's geometry mesh into 'meshlets' and processing them in parallel across the GPU's cores, they fundamentally change the rendering pipeline.

HOT MESH

"Mesh shaders [make] geometry processing behave more like compute shaders," wrote DirectX dev lead Shawn Hargreaves on the Microsoft DirectX blog. "Rather than a single function that shades one vertex or one primitive, mesh shaders operate across an entire compute thread group, with access to group shared memory and advanced compute features

such as cross-lane wave intrinsics that provide even more fine-grained control over actual hardware execution. All these threads work together to shade a small indexed triangle list, called a 'meshlet'.

Typically there will be a phase of the mesh shader where each thread is working on a separate vertex, then another phase where each thread works on a separate primitive – but this model is completely flexible allowing data to be shared across threads, new vertices or primitives created as needed, existing primitives clipped or culled, etc.

"Along with this new flexibility of thread allocation comes a flexibility of input data formats. Mesh shaders no longer use the Input Assembler block, which was previously responsible for fetching index and vertex data from memory. Instead, shader code is free to read whatever data is needed from any format it likes. This enables novel new techniques such as

index buffer compression, or the use of different index buffers for different channels of vertex data. Such approaches can reduce memory usage and also reduce the memory bandwidth used during rendering, boosting performance."

Mesh shaders' parallelism means they scale well as you throw more cores at them, and their flexibility means you can make decisions about culling geometry that won't be seen earlier, so less time is wasted processing it, and this also applies to LOD scaling, where more distant objects are less detailed. Traditionally calculated on the CPU, mesh shaders allow them to be moved to the GPU, speeding things up a lot.

It's not just increased core counts and larger amounts of VRAM that increase a GPU's rendering speed. GPGPU, or general-purpose computing on GPUs – think the sort of innovations that came with DirectCompute in DirectX11, OpenCL or Nvidia's CUDA parallel computing platform and API – is seeing

innovations from the supercomputing world move over to our gaming GPUs. Many of the world's fastest supercomputers run on GPUs, after all. GPUs are already very good at breaking a complex problem down and processing it over many, many cores (8,704 in the RTX 3080) at the cost of high power consumption.

Mesh shaders, like many innovations in graphics processing, are all about using these supercomputing resources more efficiently, and if that means better framerates and lower electricity bills, then that's something we can definitely all get behind. ■

Ian Evenden

MESH SHADERS' PARALLELISM MEANS THEY SCALE WELL AS YOU THROW MORE CORES AT THEM

YOUR NEXT PC

BUYER'S GUIDE

Build the best PC for your budget



KEY

Budget build

PC gaming is for everyone. Pick the parts you want to build a new, well-rounded PC for a good price.

Mid-range build

You want to run every new game at 1080p 60fps. This recommended build will see you through.

Advanced build

You're looking for the best PC on the market and superior components. But you still want to spend smart.

BUDGET BUILD

Enjoy 1080p gaming without breaking the bank



TOTAL
£600

MOTHERBOARD		A320M-A Pro MSI £42 Everything you need and nothing else. This MSI motherboard is simple but it works. And that's all we can ask for at this price.
PROCESSOR		Ryzen 5 3400G AMD £130 Capable budget CPU and GPU in one tiny package, and it also comes with its very own CPU cooler.
GRAPHICS CARD		None This build is tailored to today's GPU shortage. But don't fret, once cards are back in stock you could slot one in to this PC for an upgrade.
COOLER		Wraith Spire AMD Free with CPU The Wraith Stealth is a great cooler made even better by the fact it comes free with our choice of chip. Budget heaven.
MEMORY		Veengeance LPX 8GB (2x 4GB) DDR4-3000 Corsair £39 For gaming we only really need 8GB of RAM, and this stuff is quick to boot.
POWER SUPPLY		MWE White 400W Cooler Master £39 Small by today's standards, this PSU from a trustworthy manufacturer offers plenty of juice for this build and a little more.
SSD		MX500 500GB Crucial £57 One of the best value SATA SSDs you can buy and plenty fast enough for a snappy OS.
HDD		WD Blue 1TB 7200rpm Western Digital £37 You don't necessarily need a HDD in 2020, but if you're a virtual hoarder, this'll give you loads of useful extra space.
CASE		Neos BitFenix £36 You'll want to minimise how often you rebuild your PC, so make sure to give it a good home. This case'll do nicely.
DISPLAY		GW2280 BenQ £105 A 1080p60 VA monitor will see you through in style and, once you upgrade, will make a superb second monitor.
KEYBOARD		G213 Logitech £40 It may be a membrane switch board, but it's stylish, and well-built. Sometimes that's worth more than cheap clicky switches.
MOUSE		G102 Logitech £35 A classic shape delivered in a sleek shell, this mouse fits all hand sizes and grips. A solid option for the money.
HEADSET		HS35 Corsair £40 This headset delivers in-game with its punchy drivers and clear microphone – perfect for video calls and multiplayer alike.

MID-RANGE BUILD

Our recommended build for playing the latest games



TOTAL
£1,438

MOTHERBOARD		B450 Tomahawk Max MSI £120 A reliable platform for your build, the Tomahawk Max also comes in black to complement any style.
PROCESSOR		Ryzen 5 3600X AMD £198 This CPU is one of the greats, and uses the Zen 2 architecture to dominate in gaming and productivity.
GRAPHICS CARD		GeForce RTX 3060 Ti Founders Ed. Nvidia £369 The RTX 3060 Ti is a little overkill but we're willing to make sacrifices elsewhere to make it work.
COOLER		Wraith Spire AMD Free with the CPU We love a freebie, especially one as capable as the cooler included with the 3600X. This'll keep your machine running smoothly.
MEMORY		Ballistix 16GB DDR4 (2x8GB) Crucial £75 With plenty of capacity at 16GB, this unembellished memory has everything you need for gaming and more.
POWER SUPPLY		CX650M Corsair £93 The heart of your gaming PC is your PSU, and this 650W Corsair promises to keep your rig ticking nicely.
SSD		S70 1TB Addlink £70 Building on a budget doesn't mean sacrificing speed – the Addlink S70 proves you can indeed have both.
HDD		WD Blue 1TB 7200rpm Western Digital £37 Just like in the budget build, this HDD isn't strictly necessary, but for a pretty low price it's nice to have plenty of extra space.
CASE		Eclipse P400S TG Phanteks £70 An ATX case is all you need for this build. We like this one because it's simple, functional, and really nice to look at.
DISPLAY		AOC G2590FX AOC £173 Everything a PC gamer could want: Full HD, 144Hz refresh rate, 1ms response time, AMD FreeSync and Nvidia G-Sync compatible.
KEYBOARD		Alloy FPS HyperX £80 As the name suggests, this keyboard is built like an absolute tank, with a steel frame and Cherry MX switches.
MOUSE		Model O- Glorious £59 Lightweight and responsive, the Model O- has made a name for itself among streamers and pros thanks to its clever design.
HEADSET		Blackshark V2 Razer £94 The Blackshark V2 offers up some killer audio quality to rival the greats. And at a reasonable price too.

ADVANCED BUILD

Go above and beyond with a PC powerful enough to end worlds



TOTAL
£3,666

MOTHERBOARD		MPG Z490 Gaming Carbon WiFi MSI £260 A heady mix of enthusiast motherboard functionality and build quality that stops short of god-tier motherboard pricing.
PROCESSOR		Core i9 10900K Intel £529 If you want the fastest gaming CPU, look no further than Intel's flagship Core i9.
GRAPHICS CARD		GeForce RTX 3080 Founders Edition Nvidia £649 The RTX 3080 is the flagship graphics card of an entire new GPU generation.
COOLER		Kraken X63 NZXT £123 One of the most stunning AIO coolers rebuilt with an updated pump and, of course, RGB lighting for more pizzazz.
MEMORY		Vengeance RGB Pro 32GB DDR4 (2x16GB) @ 3,200 Corsair £176 If you truly want to show off, even your system memory should be aglow with RGB.
POWER SUPPLY		SuperNOVA 1000 G5 Gold EVGA £200 This calibre of gaming PC draws a lot of power. Thankfully, this PSU can handle it with high efficiency.
SSD		WD Black SN750 1TB Western Digital £169 Western Digital is back on Samsung's heels with this brilliantly fast, yet affordable, 1TB M.2 NVMe SSD.
HDD		860 QVO 2TB Samsung £195 Built on QLC flash memory, it's not the quickest storage around, but it's a speedy alternative to an HDD.
CASE		600C Corsair £135 If you're going big on parts, you should grab a case that has plenty of room for upgrades down the line. This one will do just fine.
DISPLAY		Nitro XV273K Acer £780 This one's an easy choice – 4K and 144Hz for under a grand is an offer we can't refuse, and neither should you.
KEYBOARD		G915 Lightspeed Logitech £210 Low-profile mechanical switches are just the icing on the cake that is the superb, wireless Logitech G915.
MOUSE		G502 Lightspeed Logitech £110 With a lengthy battery life and a phenomenal sensor to keep you gaming at your best, the G502 is undoubtedly one of the finest.
HEADSET		Arctis 7 Wireless SteelSeries £130 If you've settled on a wireless keyboard and mouse, the last thing you want is a pesky cable to your headset.

EXTRA+LIFE

CONTINUED ADVENTURES IN GAMING

This, but with my Xbox controller.



“Forcing yourself into basic competency reframes the experience”

SEKIRO: SHADOWS DIE TWICE goes down much smoother the second time around

For the last year or so, I've only associated *Sekiro* with frustration and anxiety. I wrote about beating the final boss using a slow-motion mod when *Sekiro* released, which led to dozens of death threats in the inbox and mentions, and to a meme big enough to make the news all over the internet, from *Vice* to the BBC. The voice actor for Liquid Snake, Sonic the Hedgehog, and the XCOM commander all chimed in with takes on the thing. “You not only cheated yourself...”

It was funny in retrospect, but not while in the eye of the hurricane. I didn't touch *Sekiro* after that. Until

JAMES DAVENPORT



THIS MONTH
Rewrote bad memories over with good ones.

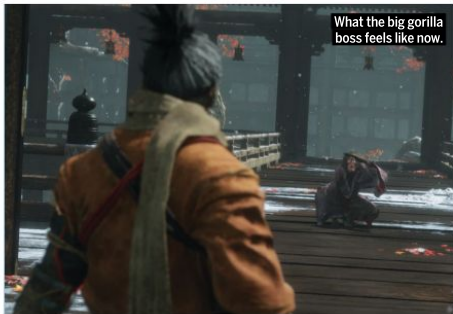
ALSO PLAYED
Loop Hero,
Spelunky 2

now, at least. I've been inside for a year. The Snyder Cut exists. Actual Elden Ring footage leaked. Anything is possible, so I might as well try to reconnect with *Sekiro*.

I'm realising that I've always loved *Sekiro*. I only thought the last boss was bullshit. I still do, but the journey there is a blast, and even better once you've subjected yourself to the misery tax *Sekiro* demands up front in order to learn how it works.

The initial hours leading up to and including the first bout with Genichiro feel like a different game with a clear understanding of *Sekiro*'s swordplay. Because I've already rejected my *Dark Souls* instincts, I'm clearing arenas without much issue. Parry timing is baked into my brain with most enemies, and I'm better able to oscillate between stealthy and aggressive play. It's odd, really, because *Sekiro* is the most forgiving From Software game 80% of the time. There's not a single non-boss

SEKIRO IS THE MOST FORGIVING FROM SOFTWARE GAME 80% OF THE TIME

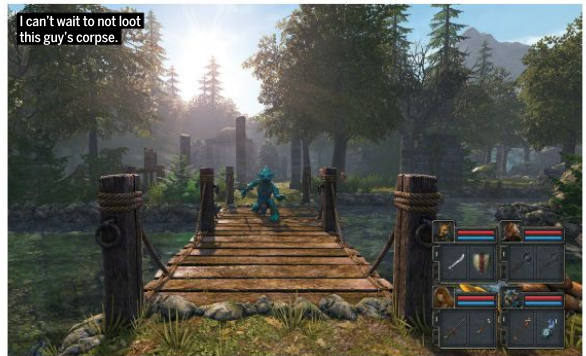


encounter you can't just run away from for a quick mental reset, and after you've proved your mettle you can just grapple hook through the whole damn game. *Sekiro* isn't an elegant teacher, but forcing yourself into basic competency reframes the whole experience.

Some highlights from *Sekiro*, Round 2: the ape fight is now my favourite. I'm no longer pissed about the surprise second form. I can also finally parry lightning, which made Genichiro's final form a much cooler, smoother affair. Ingesting *Sekiro*'s combat vocabulary takes time, but little in games feels better than building up that demonstrable instinct. My favourite a-ha moment was noting that the Okami people were weak to poison in a tidbit of item description, then testing the Sabimaru attachment to trivialise every fight with them.

I'm also better able to appreciate the narrative this time around. Having already pieced together the basic story, I can pay more attention to the details now, and there's a lot to appreciate. I know who Tomoe is and see signs of her history everywhere. A shame we didn't get to see that story told in DLC or comic book form. My renewed fascination set me off on a VaatiVidya lore video bender, watching every one of his *Sekiro* story summaries and character-focused videos in a single session.

The only thing left to do? Take down the final boss. Wish me luck. ■



“If you can’t eat it then it’s junk”

Rejecting capitalism in **LEGEND OF GRIMROCK 2**

ROBIN VALENTINE



THIS MONTH
Learned to live without material things.

ALSO PLAYED
Legends of Runeterra,
Trials of Fire

RPGs trend towards bloat. People want bigger worlds, more stuff, greater choice. But as in any genre, the things that are missing can end up defining the experience far more than what's there.

After adoring the first game, I've finally recently dived into *Legend of Grimrock 2*, and it's reminded me of one of my favourite absences in gaming: neither game has any merchants. In fact, they have no commerce at all. You can't trade or barter. There isn't even any money. Any gold or jewels you do find are just dead weight – if you can drag them to the end of the game, you'll earn an achievement, but really they serve no function.

That's got to be almost unique among RPGs – I struggle to think of another without any means at all of buying or selling goods. And it deftly solves a classic problem almost all RPGs have: hoarding.

We've all been there – you're travelling the lands, recruiting companions and vanquishing evil,

and it's all very exciting, but you just can't help bogging down your quest by picking up absolutely everything in sight. As you hit space limits or your weight capacity, you have to trudge back to town to sell all your pointless gubbins, usually inflating your gold supply to the point where money becomes meaningless before the game is over. Crafting systems only make the compulsion worse, imbuing every piece of detritus in the environment with a dangerous sort of potential. 'But what if I need it later?'

ONE MAN'S TRASH

In the world of *Grimrock*, the only potential anything has is in helping you to survive right now. Is this axe better than your current one? No? Then its only worth is as a heavy object to hold down a pressure plate. It might have beautiful gold inlay, and be the only one of its kind in the entire game, but if you can't eat it then it's junk.

Everything only has the value you give it, and it's amazing how freeing that is. I leave a trail of shields, helmets, and swords in my wake, and I never have to give any of them a second thought. Instead I save my limited inventory space for the things I truly treasure. Like a stack of pebbles I can use to solve all manner of puzzles, or a piece of cheese for my ratman leader to scoff later, or an old scroll with a useful potion recipe on it. For once I'm not a hoarder – I'm a survivor. ■



The loop starts barren, but quickly fills up with cards.



Combat doesn't require the player to do anything but hope and pray.



“It’s my job to experiment and find ways to game the system in my favour”

LOOP HERO is a retro card-battling RPG that’s as obtuse as it is fascinating

Retro indie games are too common these days, but it’s rare to find one that so bravely – and resolutely – clings to the past. Sure, throwbacks like *Hyper Light Drifter* or *Celeste* evoke games of bygone eras, but they mix that together with a ton of very modern design and graphical features. But *Loop Hero* doesn’t just echo games of yore, it feels like a long-lost relic. To put it bluntly: this shit is old school.

The idea is brilliant in its simplicity: you play an adventurer who survived an apocalyptic event in which an evil lich erased the world. To restore everything, you walk along a barren loop of road fighting monsters. Sometimes these monsters drop cards, which you can then place either on the road, beside it, or somewhere off in the inky nothingness that surrounds you. Placing a Swamp card, for example, means mosquitos will begin to spawn on that tile next time I pass through. I might earn some equipment from killing one or some nice resources, or maybe I’ll just die and lose everything and have to start building my loop again from the beginning.

STEVEN MESSNER



THIS MONTH
Walked 500 miles to fight an evil lich.

ALSO PLAYED
Valheim, Legends of Runeterra

It’s a little bit like if the deck-building roguelike *Slay the Spire* and some clicker games had a baby. Instead of actively controlling your hero, they just march ever onward and fight entirely of their own volition. Your mission is to walk a fine line where they fight ever-more challenging monsters while still earning enough loot to boost their stats so that they can survive each fight. Sitting back and watching this all unfold and occasionally playing new cards or equipping new gear sounds boring, and yet I found myself 50 hours in with no plans to stop – I’m enjoying it that much. Going in circles has never been this much fun.

IT’S A LITTLE BIT LIKE IF SLAY THE SPIRE AND SOME CLICKER GAMES HAD A BABY

TRIAL AND ERROR

What makes *Loop Hero* so tantalising, though, is how mysterious it all is. Almost nothing is explained, so it’s my job to experiment and find ways to game the system in my favour. There’s a ton of secret interactions that can unlock all sorts of powerful (or fatal) side-effects. Drop a Vampire Mansion right next to a Village, and instead of healing you the villagers will all be turned into nasty ghouls for a few laps. Eventually, though, the villagers and vampires will settle into a symbiotic relationship which means the village now heals much more HP than it ever did before. Uncovering all of these secret tricks is deeply satisfying. There were frustrating times where it felt like I couldn’t survive more than a few laps around the map, but I’ve now mastered the game to the point where I can beat its toughest bosses and return to my main base loaded with treasure.

It’s been a while since I overcame a game like that. And it harkens back to an era when games weren’t so eager to please or help the player. *Loop Hero* is so confident in what it does well that it doesn’t need to explain itself. That may turn off a lot of people. But *Loop Hero* is an enigma that’s been a joy to unravel. ■

“New me doesn’t worry about anything except not worrying”

Can **DISCO ELYSIUM** work as a tool for developing self-confidence?

I’m sorry about my first playthrough of *Disco Elysium*. So sorry, in fact, that the game branded me ‘Sorry Cop’ – the human equivalent of a Hallmark sympathy card. I spent the first hours of the game trying to make up for all the awful things my character probably did, without really knowing what they were, in a haze of post-booze self-loathing that felt entirely too much like innumerable Sunday mornings. But this time it’s going to be different. I’m going to live life (or play *Disco Elysium*) without boundaries. I’ll pick the most confident option even if it leads to results that nobody desires. Nothing says ‘assertiveness’ like choosing things based on how much other people don’t want me to have them.

The first example of this manifests as me finding a woman’s missing husband. Except he’s not missing and she doesn’t want me to find him. But the new, assertive me insists she does, so I keep pushing, only to discover that he actually *is* missing and she sort-of wants me to track him down.

MATTHEW ELLIOTT



THIS MONTH
Went on a journey of self-improvement.

ALSO PLAYED
Dicey Dungeons,
Loop Hero

This is the proof I didn’t need that brazen self-confidence always leads to positive results and I can’t envision a single circumstance where this won’t be the case. That’s the sort of thing old me would worry about. New me doesn’t worry about anything except not worrying.

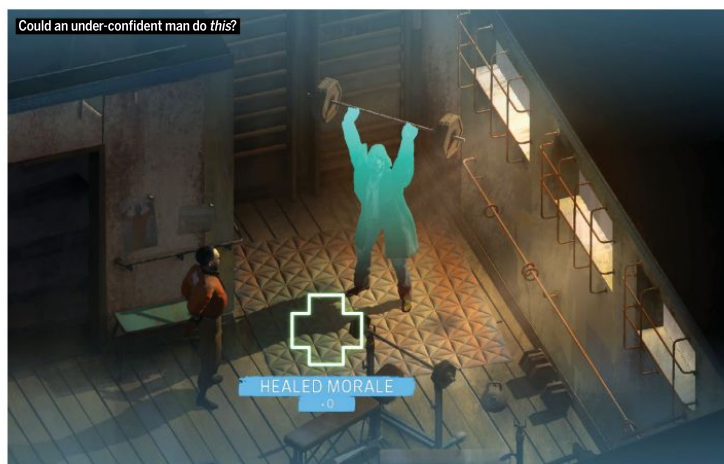
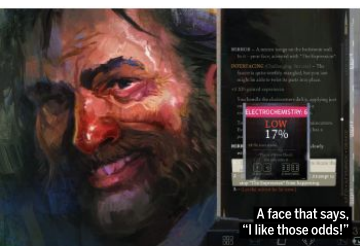
SENSE OF WORTH

My thrusting self-confidence manifests elsewhere. I decide to find out what my heraldic bird is and conclude it must be a Major Majestic cockatoo. A normal cockatoo just wouldn’t cut it. I try to fix the broken tap in my bedroom with chain cutters

so I can better see my reflection – and then I even fix the expression on my face as well. (We’ll skip over the bit that says I look like a sad, old man. A sad, *confident* old man.) It’s not enough. My eruption of self-improvement needs structure, so I buy a map. Something, despite being over 40 hours into the game, I’m yet to do. This lets me tick off specific tasks Useless Former Me left unfinished. I lift barbells and get discounts on key items in the pawn shop. I don’t worry about how people will react. It’s a revelation. My only regret is the hours I spent worrying about other people’s feelings.

And then *Disco Elysium* ruins it. I find a lifeless body on a boardwalk. A man who died drunk and alone. And the hard-to-spin-into-an-inspiring-story news is that it’s the husband of the woman I was talking to earlier. Telling her about his death is genuinely touching and sad, and had the game even offered a brassy, swaggering way to break the news, I’m not sure I’d have taken it. It’s a moment that makes me wish I’d put fewer points into empathy in real life – but I’m more glad than ever I’ve got them in *Disco Elysium*. Thank you for coming to my TED Talk. ■

I’M GOING TO LIVE LIFE (OR PLAY DISCO ELYSIUM) WITHOUT BOUNDARIES



WARFRAME

An overhaul for the contentious space combat. *By Steven Messner*

When *Warframe* first added ship-to-ship space combat back in 2019, it was easily one of its most ambitious updates ever. The free-to-play loot shooter had experimented with zero-G fights with Archwings a few years earlier, but Railjack was much akin to *Sea of Thieves*. Players form a crew and explore dangerous asteroid fields surrounding various planets aboard a ship called a Railjack with multiple stations each player can take control of. Or they can eject themselves into space and board enemy ships, destroying them from the inside. But as cool as Railjack is, it fell woefully short of what players expected. For one, it was just too damn complicated.

That's what *Warframe*'s latest update is trying to fix. Called *Corpus Proxima* and *The New Railjack*, this update completely overhauls *Warframe*'s ship combat to make it both more accessible to all types of players, less obtuse, and, best of all, much less grindy. It also adds a new region to explore with different missions, enemy types, and some new rewards that'll make Railjack more enticing to players. It's a huge revamp that fixes a lot of the biggest issues with the Railjack game mode, but it also still needs more work.

NEED TO KNOW

RELEASE March 25, 2013	DEVELOPER Digital Extremes
PUBLISHER In-house	LINK warframe.com

If you haven't played *Warframe* (or are a lapsed player), what you should know is that Railjack is extremely fun. The new update makes it easier than ever to pilot one all by yourself or find a crew to run missions with, and it also makes it so you can build your own Railjack ship without much effort – though there are some glaring problems.

OFF THE RAILS

Before the update, for example, Railjacks could only be built by player clans that had first finished construction on a Drydocks room in their clan dojo. Now the major player hubs (called Relays) have their own Drydocks everyone can use. The problem? There's currently no way to start the Railjack intro quest and start building one because one of the items you need to start the quest can still only be obtained from clan Drydocks, not the public ones. It's an issue that required me to shell out some platinum (*Warframe*'s premium currency) in order to get my own Railjack directly from the in-game market, and this feels like it is a massive oversight.

Fortunately, that was the only hiccup I really had getting into Railjack. As part of the overhaul, the entire progression system for it has been streamlined so that it feels much more in sync with *Warframe*'s other main features, like Archwing flight suits and up-close running and gunning. The old system for modding your own Railjack has been gutted entirely and replaced with a new modding system that works similarly to modding your individual guns or warframe exosuits. Cards you earn from missions can be slotted into different spots on the mods table to unlock their bonuses.

There's also a completely new set of skill trees devoted to different playstyles in Railjack. Investing into the Captain tree, for example, let's you unlock crew slots on your ship that can be filled with recruitable NPCs to stand-in for actual players. Meanwhile, one useful Gunner



A HUGE REVAMP THAT FIXES A LOT OF THE BIGGEST ISSUES

upgrade lets you swivel the secondary cannons 360 degrees to track your enemies and then blast them away with glee.

Along with the new missions types, I'm having a lot of fun with Railjack. It's thrilling being inside your ship one minute, out in space fighting in your Archwing suit the next, and then infiltrating an Grineer crew ship from the inside, commandeering it, and using it against the enemy. *Warframe* still has a problem where new features like Railjack often feel like islands separated from the main game – secondary pockets of grinding that don't feed back into your main journey all that much, but now Railjack feels a lot more in tune with the rest of *Warframe*.

There's still a lot of problems to solve alongside annoying issues, but this feels like a much better foundation for the future of the game. Railjack represents a big leap forward for *Warframe* and, after its first year left a lot of players frustrated or turned off by the mode entirely, its refresh feels like a chance to start over again. ■

ROLE PLAY

The four roles every Railjack crew needs to fill



PILOT

It's your job to pilot the Railjack around the map, keep it alive, and fight any enemy ships that get too close.



GUNNER

Use the side guns and forward artillery to blast any and all enemy ships that happen to get in your way in space.



ARCHWING PILOT

Exit the Railjack and engage enemy ships with your Archwing flight suit. Board crew ships to commandeer them.



ENGINEER

Repair hull breaches on the Railjack, repel boarding parties, and synthesize more essential Railjack ammo.

New armaments and mods are frequently found during fights.



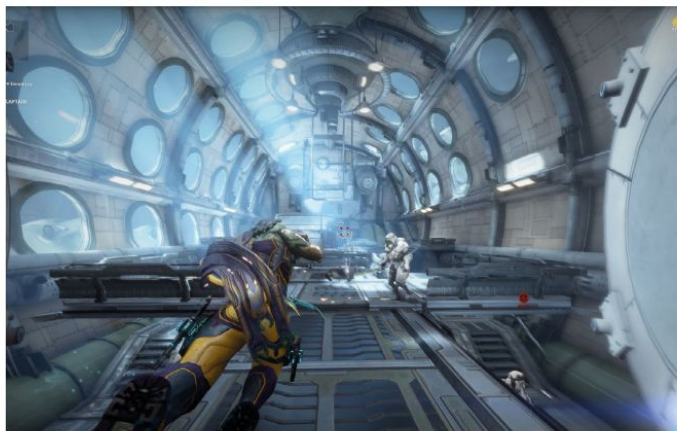
Boarding enemy ships is just like a traditional Warframe mission.



You can use Archwings to fly around freely outside of the Railjack.



Commandeering enemy ships never stops being fun in Railjack.







CONTROLLER SUPPORT

Three tricks on Redriver 2's pad



L1 + THUMBSTICK
Throwing the wheel into full lock can instantly correct a handbrake turn.

Y + DIRECTION BUTTON
Clamber out of your car toward a slick new ride parked on the street.

B
A rear-wheel burnout can get you moving fast, but watch out for oversteer.

REDRIVER 2

Driver 2 comes to PC for the first time. By Jeremy Peel

The Las Vegas strip, chunkily but recognisably rendered in PS1 polygons, screams by at a rate of about two lampposts per second. I'd check the speedometer for a more conventional reading, but I daren't look down for even a moment. As I weave between the street furniture into oncoming traffic, two squad cars mimic every jerk of my steering wheel. They're so close behind that, occasionally, the nose of a pursuit vehicle bumps into the rear end of my 1971 Dodge Challenger, nudging the speed still higher. This is fender bender figure skating, and it only ends one way: with a car-totalling crash. The question is whose.

Eventually, my slaloming across the central reservation succeeds in sending one panda into a neatly manicured tree outside a casino, and the second crumples straight into the wreckage. One of the drivers radios in the result, presumably through a heavy nosebleed, "We lost 'em."

It's the kind of classic car chase PC gamers knew well in 1999, when *Driver* came out. But what happens next is new. With the cops gone from my rear-view mirror, I get the hell out of my Dodge, stepping onto the tarmac. Black smoke plumes from its hood as if announcing the selection of a new pope, but I'm actually picking a new disguise. I plump for a Chevy pickup, leaving the Challenger and its heat burning in the middle lane of the Boulevard. When the next police cruiser passes, all its driver sees is a weekend gambler trundling safely below the speed limit.

This is *Driver 2* – until now, a missing link in the development of urban driving games that ultimately gave us *GTA III*. Bafflingly, the sequel to a million-seller only ever came out on the PlayStation, on two discs, and on the Game Boy Advance in a form more truncated than a cop car wrapped around a telegraph pole. But

through a huge amateur effort, led by a software engineer who goes by the moniker SoapyMan, fans have finally succeeded in reverse engineering the PlayStation code that powered Reflections' tribute to Bullitt.

WHEEL DEAL

You can see the gruelling timeline laid out on GitHub: an entire year dedicated to building the skeleton and making preparations, then several months more getting the game fully playable with its cutscenes intact. But the modders didn't stop there – they've since fixed bugs that Reflections never got to, and completed some "unfinished gameplay aspects". They named the project *Redriver 2*, after the Red River bar that's shot up in the game's intro, and put it out before Christmas.

It's an ordeal to install – starting with ripping image files from the



WHILE THE TECH MAY BE ANCIENT, REFLECTIONS' HANDLING STILL FEELS MODERN

original PlayStation discs, and ending with me consulting a step-by-step YouTube video. But it works, and how. While the tech may be ancient, Reflections' handling still feels modern. There's a good reason for that: the studio's physics know-how today underpins the vehicles in *Watch Dogs* and *Ghost Recon*.

Redriver 2 is a light-touch mod. Much of what it does is invisible, mimicking the convenience and accessibility features of contemporary games – the likes of autosaving and subtitles in cutscenes. Then there are the subtler touches, like the leaves being disturbed by the whoosh of vehicles flying by.

The deepest changes are reserved for cop AI, which is both smarter and better balanced for difficulty. New

navigation and pathfinding leaves them well equipped to trail me around the feet of Vegas's replica Eiffel Tower – but equally, cops can no longer spot me if I'm driving above or below them. That's significant, given that one of *Driver 2*'s 20-year-old innovations was sliproads and overpass systems, and they're sprinkled liberally around its recreations of Vegas, Havana, Rio and especially Chicago.

SILENT RUNNING

Like its predecessor, *Driver 2* is a vehicular stealth game that sometimes requires you to loiter at a junction or feign respect for the highway code while a lawman rolls by. The act usually lasts just a few seconds before you floor it to reach an objective as your timer runs down. But it's the tension between the two conflicting needs, for speed and caution, that makes getting from A to B entertainingly unpredictable.

In retrospect, it's easy to see the attraction of *Reflections* to its current owner, Ubisoft. You can see the parallels with *Assassin's Creed's* tailing missions – *Driver 2* sometimes asks you to follow a car while keeping your distance – and the vision cone stealth of *Black Flag*.

In vibe and setting, however, *Driver 2* is totally itself. Told through cutscenes of unusual cinematic flair for the time, this 1970s crime thriller isn't so much dripping cool as sopping with it. A gang boss's accountant has defected to a rival syndicate, and the potential for lost trade secrets has the criminal underworld ready to boil over.

Enter undercover cop Tanner and his partner Jones, looking to find the accountant and defuse tensions – engaging in smoky conversations in basement bars, sleuthing in the vents of sweaty Havana warehouses, and enabling no small number of getaways as they ingratiate themselves with the bad guys.

Speaking of whom, *Driver 2* introduces Jericho, the series antagonist last seen in 2011. Resplendent in a floor-length trench coat and carrying two sawn-off shotguns, despite the very real danger of kickback damage to his shoulders, he epitomises the turn-of-the-millennium action genre in all its fantastic absurdity.

The Vegas sequence is perhaps the high point, as the two vying gangs converge on the city. What ensues is something like a playable Scorsese montage – the kind that alludes to a year of tit-for-tat bombings and takedowns, only with you playing out each vignette. One high-concept level, in which you race to overtake a train and swap vehicles on the tracks, saving the victim trapped in the boot



THE REDRIVER 2 TEAM HAS PRESERVED REFLECTIONS' EXACTING DIFFICULTY

of the second vehicle, contains more drama in 30 seconds than many driving games do in half an hour.

Brief though that final successful run may be, a single *Driver 2* mission can easily gobble hours. Aside from one tweak to a jump from an exploding ship, the *Redriver 2* team has preserved *Reflections'* exacting difficulty. Back then, the studio didn't balance its games with the help of regular focus testing, as it later did with *Driver: San Francisco*. Instead, it relied largely on the instincts of director Martin Edmondson, who it's fair to say must be one of the best *Driver* players in the world.

Fail states come fast and frequently, particularly during levels where you're required to catch up with and take down another driver. There's one late-game scene, named

Chase the Gunman, which remains notorious among series devotees. The gunman takes off down a lethal Brazilian mountain pass, weaving between two lanes of traffic on a narrow high wire where a single mistake means death.

CORNERED

To make matters more painful, *Reflections* alters its physics for encounters like these – granting your target the centred momentum of an armoured train. A perfect PIT manoeuvre, which would ordinarily steer an opponent off the road, instead pings you off the cliff edge like a pinball. The only way to win is with gentle dents to the target's bumper – or, if you're daring enough, an overtake followed by a hard brake.

Abandoned forum posts speak of all-night sessions skidding around the same cursed corners, or years of scattered attempts ending in sudden and unexpected victory. I was fortunate: it only took me a week.

That sort of ordeal would rightly be called out if *Redriver 2* were a commercial product released today. And yet it's exciting to be challenged in this way by an urban driving game. Even now, only motorsport simulations demand real mastery from their players – no street race in *GTA V* will ask you to perfect the flick of a steering wheel. *Watch Dogs*, meanwhile, seems to have given up on driving missions completely.

Cheap and cruel as Chase the Gunman's tricks are, they can only be overcome with consistently excellent driving – hurtling between static objects at terrifying speeds, and pulling off handbrake turns without so much as half a second lost to oversteer. *Redriver 2* gifts us with a chance at road virtuosity, a space to satisfy the sneaking suspicion that you might just be the best getaway driver in Los Santos, if only you were given something to push against.

In fact, I suspect that *Redriver 2* is actually harder than its inspiration. Play *Driver 2* on a PlayStation emulator, and you'll see that the game slows right down when things get busy – covering for lost frames on the limited hardware. In effect, console players were navigating that Rio mountain pass in convenient slo-mo. Now, on PC, there's no such crutch. All of which is to say that if you complete *Redriver 2*, you can consider yourself the top player on an ancient, forgotten leaderboard. And even if you don't catch up with that gunman, you will have played some of the finest car chases ever committed to code. ■

ROGUE'S GALLERY Meet the cast of Driver 2



TANNER

Ace wheelman and undercover cop, our star gets more talkative over the course of the series.



JONES

Tanner's partner, who spends the latter half of the game dangerously deep in gang drama.



JERICHO

A hitman whose tactic is to stand stock still in the street and blast cops. Somehow always survives.



SOLOMON

Jericho's boss is caught on the backfoot from the start of the game, but gives as good as he gets.



LENNY

A slimy mob money man whose defection is the catalyst to an international gang war.





Defeat The Lich in LOOP HERO

Exact carefully-orchestrated revenge on the world-destroying first boss. *By Harry Shepherd*

NEED TO KNOW

DIFFICULTY
Easy

TIME
One hour

VITAL LINKS
Loop hero classes:
bit.ly/3r9ZUXf

Card combo list:
bit.ly/3f55zq4

All bosses guide:
bit.ly/3lvRoHw



ESCAPE ARTIST

1 Assess your situation each time you start a new loop. You'll only limp back to camp with 30% of your hard-earned resources if you die, so there's no shame in backing out if things are getting tough. The Lich can wait.



BASE CAMP

2 Any feelings of shame from ducking out early will fade when you have more resources to spend back at camp. Prioritise buildings like the Herbalist's Hut to give you potions and the Field Kitchen to boost your campfire's healing powers.



BAR HUMBUG

3 Keep your eye on the progress bar in the top-left of your screen with a skull next to it. It gradually fills each time you play a card, and it'll end with the Lich spawning on your camp. To help prevent that, don't play cards willy nilly.



TIME TEAM

4 The bar above the boss spawn indicates how much time has passed in each day. Many tiles will trigger their effects based on the passing of time – including monster spawns and the healing effect of meadows.



EAT THE LICH

5 You can use Oblivion to delete cards and reduce the boss progress bar, but save some for The Lich's palaces. They spawn with the boss each around your camp, each giving him a 5% stat boost up to 35%. Ouch.

PLANNING

6 Another way to stop The Lich's palaces spawning is to get there first. With the status of the boss progress bar in mind you can place tiles near your campfire to deny The Lich its palatial bonuses.



RARE FIND

7 Don't automatically swap in new higher-levelled gear. Check its stats first and make sure it fits your build, noting that rarer gear gives more bonuses. Unused gear turns to scrap if your inventory fills, which is a useful resource.

PEAK GRINDING *Repeat the best card combination for more rewards*



SURPRISE MECHANICS

8 Tiles react to each other in intriguing ways, so it pays to experiment with your card placement. As you place cards, study the changes that happen to itself and adjacent cards carefully. Note: there are few that are solely good or bad.



RISK REWARD

9 Gear is acquired by killing enemies, so loading up your loop with hostiles increases your chance of decent loot you'll need against The Lich. However, that means your world will be more perilous, so add new foes with caution.

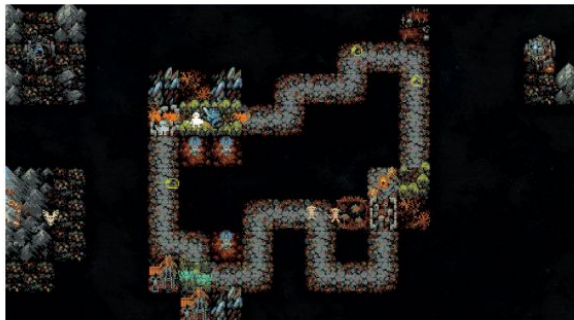


HEAD START

10 That said, filling your board with enemies early on could play into your hands, if your increased loot drops bear fruit. The Lich's difficulty scales with the level of your loop – the earlier you spawn it, the weaker it'll be.

CROWD CONTROL

11 Maximise the effectiveness of friendly boons by spawning enemies close together. Blood Groves will finish off hostiles with less than 15% HP remaining, so make the most of it's area of effect.



ROGUE STATE

12 Choose the rogue class to fight The Lich. If you've been unable to prevent some of The Lich's palaces spawning, upping your evasion stats to avoid its damage will be essential. Ram home your advantage with vampirism and critical hit boosts.



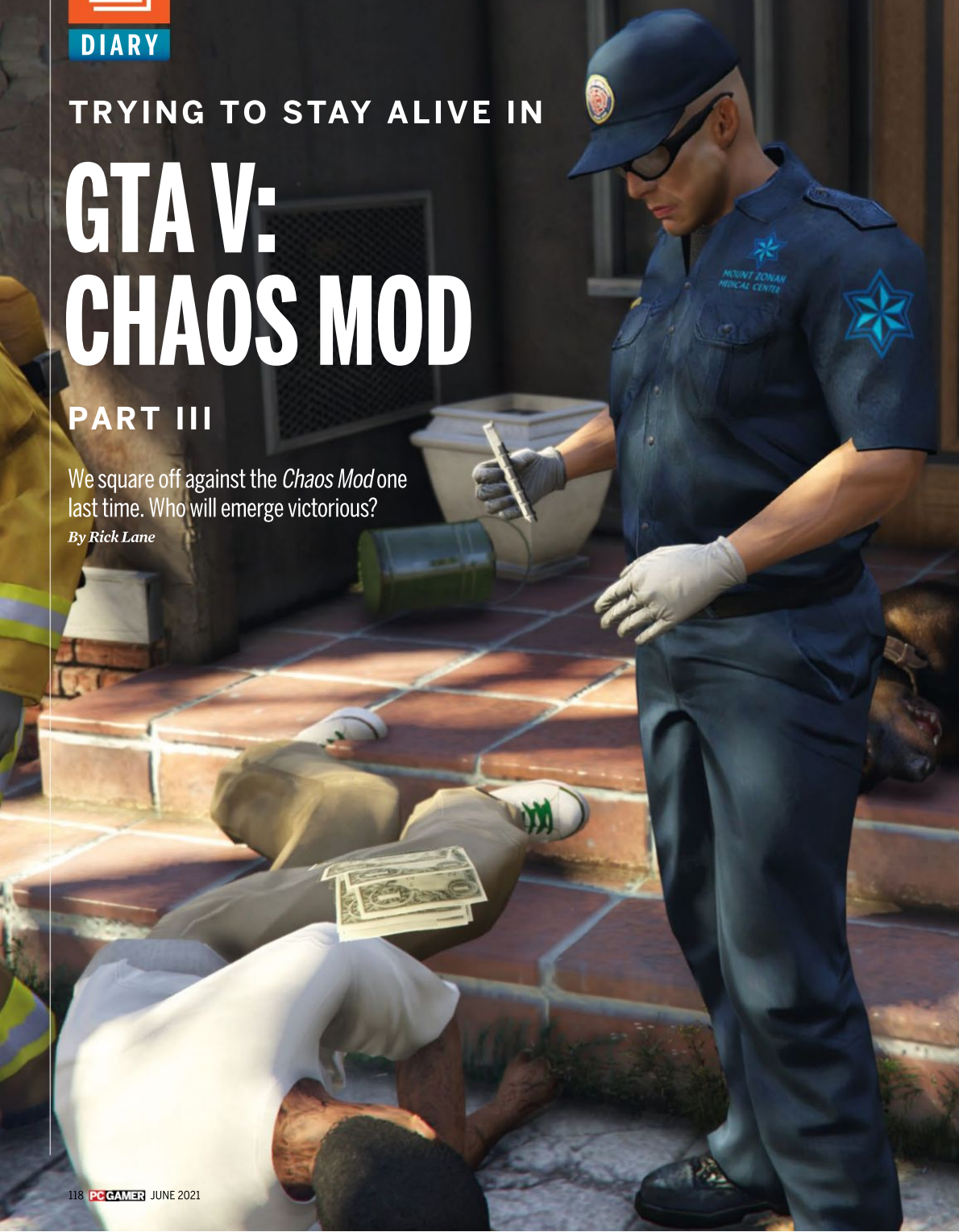
TRYING TO STAY ALIVE IN

GTA V: CHAOS MOD

PART III

We square off against the *Chaos Mod* one last time. Who will emerge victorious?

By Rick Lane



THE RULES

- 1 Every five minutes, a random event will occur.
- 2 Random events must be played through.
- 3 No reloading except upon death.

When I last grappled with *Grand Theft Auto V's* *Chaos Mod*, which throws random events into the game like a rogue barista pouring hot sauce and spider eggs into your skinny caramel latte, Michael had just been teleported into Los Santos' military base. As you can imagine, the famously congenial US Military doesn't take too kindly to a murderous middle-aged thief appearing in their top-secret compound (at least, not one who isn't wearing his uniform, oh-ho!) and soon the base is lit up like 17th century London after a certain baker left a certain oven on.

A solid cliffhanger, if I say so myself, neatly set-up for me to begin this entry with a daring escape from one of Los Santos' most secure locations. It would be a shame if, say, Michael got annihilated the moment a khaki-clad army type came into view. Good thing this isn't exactly what happened, then! Ahaha. Aha. Ugh.

JUST A PHASE

Emerging from the hospital after his massive lead overdose, Michael drives across town for a rendezvous with his FIB handler Dave Norton. Furious that Michael has leapt back into the armed robbery game (placing his cover story and Dave's career in jeopardy) Norton opts to turn the situation to his advantage, tasking Michael with sneaking into a hospital to identify whether a body there belongs to an FIB source. This requires Michael to appear dead, which Dave carefully arranges by clubbing Michael in the back of the head.

Now back in hospital again, Michael leaps out of a body-bag and commences his search for the errant corpse. For some reason the morgue is guarded, and while I manage to knock out the first guard and steal his pistol, the second spots me and begins to shoot. Naturally, I shoot back, whereupon Michael clips through the floor and plummets into the grey abyss beneath Los Santos.

At this point, I expect one of two things to happen, either Michael will fall forever, or he'll die and the mission will restart. Instead, somehow Michael respawns *outside* the hospital. In theory, this means I can continue

the mission, but I can't see a way back inside. Frustrated, I take a potshot at a passing car. Next thing I know, I'm inside the car. I see what's going on here. The *Chaos Mod* is making me teleport to the end location of any bullet I fire. I use this ability to access the hospital rooftop, where the objective icon is. There's no entrance here either, but I don't have to work the problem any further, as a UFO spawns right where Michael stands and kills him dead.

Respawning back in the morgue, I now attempt to escape the hospital in the specific manner *GTA V* wants me to. But the teleportation effect makes combat next to impossible, as each bullet fired exposes Michael to enemy gunfire, traps him in the game geometry, or simply catapults him out of the world entirely. I fight in vain until the effect expires, whereupon the *Chaos Mod* turns all the NPCs into spinning ragdoll horrors and I'm able to

complete the mission with minimal obstruction.

YOGA RANTS

Returning home, Michael treats himself to some well-earned TV time. But a confrontation with his wife leads him into an impromptu yoga session with Amanda and her guru Fabien. The yoga mission is

MICHAEL CLIPS THROUGH THE FLOOR AND PLUMMETS INTO A GREY ABYSS

one of the worst examples of *GTA V's* restrictive attitude toward progression. It would be entirely in-character for Michael to be rubbish at yoga because he's an overweight late-40s layabout. But no, Michael failing at yoga also fails the mission, because *GTA V* is so obsessed with its own narrative grandeur it leaves no room for player agency.

Luckily, the *Chaos Mod* comes to the rescue. I'm not entirely sure what it does, but the result is that both Amanda and Fabien run off, while a bunch of random NPCs wander into Michael's back yard and begin hurling profanities at him. "You fucking shit!" a man yells as Michael's struggles with the 'Warrior II' pose. "Why don't you blow me?" spits a scarfed ginger fellow as Michael attempts the 'Dancer'. "Eat my ass!" growls a woman as Michael assumes the plank, his calming exercises now accompanied by the sound of distant explosions.

After the world's least relaxing yoga session, Michael accompanies his son Jimmy to buy drugs. Sampling their purchase together, the mandatory 'trip sequence' ensues,

with Michael flying in his underwear over a rainbow-coloured Los Santos. When Michael returns to Earth, not only has Jimmy stolen his car, but Michael is also half his normal size. Initially I mistake it for part of the sequence, as Michael rides an inexplicably massive bicycle home. But it transpires the *Chaos Mod* has shrunk all the NPCs in the game, demonstrated by a hilarious meeting between Michael, Dave Norton, and two other FIB agents, who trade insults and cutting remarks with one another in Munchkin voices.

The Lollipop Guild tasks Michael with a mission to extract an informant from his interrogation by the IAA. I look forward to seeing how the *Chaos Mod* is going to improve/ruin it. But it passes without incident, as do the next few missions. ●●●



CHAOS TOP TEN *We've seen many strange effects from the Chaos Mod, but which are the most chaotic?*

10 Spawn Tug	9 Spawn Deadly Agent	8 Christ on a hoverbike	7 Five Wanted Stars	6 Asteroids	5 Whale Rain	4 Doomsday	3 Traffic Magnet	2 Psychotic NPCs	1 Artillery Barrage
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✱ This is a growing problem. There's still much of the *Chaos Mod* I haven't seen, but because the effects are random, with every new one I see, the chance of the next being a repeat increases. It's still capable of delivering absurd scenarios, highlighted by a cutscene outside Franklin's home where the house suddenly explodes, instantly killing Franklin's Aunt, his friend Lamar, and his dog. Not only does the cutscene continue, with Franklin now arguing with three corpses, but both the fire-brigade and the ambulance service turn up, bumbling through the cutscene like stage technicians who forgot to wear black. But it's an island of daftness in an ocean of either uninteresting effects or stuff I've seen before. I'm beginning to fear the *Chaos Mod* is running out of steam.

THE FOUR JURORS

Later, a new mission gives me an idea. While he waits around for Michael to put together another heist, Franklin has taken up a spot of hired murder for the group's fixer Lester. In the mission, Franklin has to assassinate four jurors involved in a case with Redwood Cigarettes. But there's a twist. He only has eight minutes to kill them.

This seems like prime *Chaos Mod* territory, but on the current settings, I'll only see one or two effects within those eight minutes, while there's a good chance I'll have seen them before. So I head into the *Chaos Mod*'s settings and reduce the interval between effects from five minutes to thirty seconds. That should sort things out. Boy, did it.

The *Chaos Mod* first uses its newfound power to deploy a helicopter to attack Franklin while he races to the first target. It looks like Franklin's career as a hitman will be short-lived, when the helicopter is obliterated by

the next effect – doomsday. Franklin's car is tossed about like an empty crisp packet in a hurricane, and it's only through a last minute leap from the driver's seat that he isn't blown up.

Armageddon dies down as quickly as it had started, while Franklin commandeers another car. He races to Vespucci beach where the first target is located, leaps out of the car and starts shooting... without me pressing the left mouse button. Yep, the *Chaos Mod* has set my weapons to fire constantly. If there's one thing that marks out a skilled assassin, it's wild, indiscriminate gunfire.

The target takes off, disappearing into a crowd of beachgoers. With no way to pull Franklin's finger off the trigger, I have to mow down everyone on the pathway.

One target down. Three to go. Five minutes remaining. To claw back time, I race straight across Vespucci beach. The second target is on a yacht out to sea, easily sniped by Franklin from pier. Two down. Four minutes to go.

I hop back in the car and start up the highway, when the *Chaos Mod* activates cinematic camera mode, constantly changing the camera angle while I drive in real-time. This makes my race against time look incredibly cool, but also makes it phenomenally difficult to drive. It takes me 90 precious seconds to reach the third target, who is again easily sniped from Franklin's lofty position on a window cleaner's lift.

Three down, two-and-a-half minutes to go. The final target is on a moped somewhere in the Vinewood hills. A difficult area to drive around at the best of times, but it's especially tough when it suddenly starts raining asteroids. One such space rock almost completely blocks the road leading up into Vinewood, leaving a tiny gap which I squeeze through. I kill the final target with seconds remaining. *That's* more like it, *Chaos Mod*. In fact, Franklin versus the jurors wouldn't make a bad conclusion to this diary.

But I think we can do one better.

TREVOR VERSUS EVERYTHING

One final battle. One last stand. The *Chaos Mod* against *GTA V*'s King of Chaos. I've dropped the interval timer to ten seconds, with all effects lasting half a minute. Before we start though, I must prepare. Well, try to. I'd planned to kit Trevor out with weapons and armour. But prior to deciding to do this, the *Chaos Mod* depleted my bank account, as if it knew what was coming.

That said, I can at least choose a location for the final showdown. After fair amount of deliberation, I settle on Legion Square, the architecturally abstract park in downtown Los Santos. It's close enough to roads for vehicle-effects to play a role, but it also has enough cover to offer me protection from the *Chaos Mod*'s shenanigans. I select my starting position at the park's main entrance, and set the *Chaos Mod* rolling.

The sky darkens. The tyres blow out on all the nearby vehicles. Then those vehicles catch fire. Then they turn pink. It's like a storm's approaching. The impending signs of the *Chaos Mod*'s oncoming apocalypse, mischief and mayhem all rolled into one.

Suddenly Trevor hits the ground, sideswiped by a speeding moped. I've been surrounded by a swarm of





fuchsia mods, intent on ramming me to death like a pod of bottlenose dolphins. I whip out my pistol and start shooting. The fact my gun fires cats barely registers.

I successfully clear the gang when something astonishingly loud bursts nearby. I whirl around to spy a figure across the park. I can't see him clearly because the *Chaos Mod* has draped the park in a thick fog, but a blueish blur narrowly misses Trevor's head. Some kind of force gun. I dash behind cover and take the figure down.

Now the *Chaos Mod* unleashes its full fury, slapping me with a five-star wanted level. It also starts raining whales again. I retreat deeper into the park, dodging cetacean carcasses as I go. Bullets begin flying my way. I blast a trio of cops encroaching on my position, then whip out my grenade launcher and bring down a helicopter that's been hovering above me. But there's another approaching, while the minimap is thick with flashing dots. It's really only a matter of time.

And then the *Chaos Mod* gives me a reprieve, teleporting me to some woodland town in the farthest reaches of San Andreas. I run along the road, watching for any oncoming threat. But there is only silence, and the stars, and the distant headlights of vehicles, which the *Chaos Mod* has turned kaleidoscopic in hue.

After 30 seconds of bizarre tranquility, the *Chaos Mod* teleports Trevor again – this time to the helipad atop the tallest building in Los Santos. Many of the *Chaos Mod*'s effects won't be able to reach me here, but I've also no clear method of descent. Then I spy a window cleaner's lift dangling a few feet away from the building's rooftop. It's a tricky jump, but I'm

fairly certain that I can make it.

I don't make it.

In the end, it isn't any of the *Chaos Mod*'s effects that kill Trevor. It's gravity. Trevor plummets to his death, dressed as a mad scientist, because the *Chaos Mod* had to get one last joke in. So long *Chaos Mod*. It's been unreal. ■

I RETREAT DEEPER INTO THE PARK, DODGING CETACEAN CARCASSES AS I GO



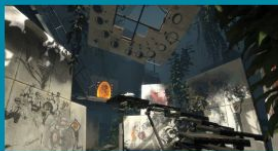


WHY I LOVE

WHAT MAKES GAMES SPECIAL

THE SOURCE ENGINE

The beautiful tension of an engine caught between eras. *By Nat Clayton*



RIGHT: My own maps eventually ditched textures and let the lighting do the talking.



There's a dead end junction, late in *Half-Life 2*'s airboat segment, that's fairly easy to miss. It's nothing special to look at. A concrete run-off with a few shanty houses and a handful of zombies. But this corner, with its distant chirping of crickets and the sunset baking the panelled walls in just the right way, is special enough that I always stop by for a visit when returning to the game. It's a corner that perfectly captures the fleeting, uniquely melancholy beauty of Valve's Source Engine.

The Source Engine, the software that drove all of Valve's games from *Half-Life 2* through *Counter-Strike: Global Offensive*, came at a uniquely transitory moment in game development. It was the mid-2000s, and 3D games were starting to look pretty damn good. Ten years earlier, and games were merely suggesting spaces through blocky corridors. A decade later, and we're looking at games that are near photorealistic.

Source bridged that gap. It's at once the last gasp of things like bsp-based terrain, baked lighting, and the entire field of level design, and a peek at the lush, living words of games to come. Over the past ten years, developers have gotten really, bloody good at wringing spectacular landscapes out of the engine – but they're doing so with a level editor built in 1997, using limitations laid down in 2004.

It's a bizarre tension, but one that gives Source maps a strange, almost haunted feeling. There's an intangible quality to the way Source levels are lit. Sounds all echo just a little more than you think they should. Hop into an empty Garry's Mod map, and the sense of isolation is overbearing.

LEVEL WITH ME

It helps that, by a rough estimate, there are probably 11 thousand billion Source maps floating around the internet right now. If Source is the last gasp of '90s design philosophies,

ANOMALOUS MATERIALS *Fancy making your own maps?*



1 BUILD IT Source (and other engines) use BSP terrain, which basically means dragging out boxes and slapping textures on 'em. Quicker than building bespoke 3D models.



2 SCRIPT IT Need a loud bang to accompany your jump scare? Setting up a brain-teasing puzzle? Most actions can be easily plugged in using in-editor logic – no code required.



3 LIGHT IT Now, the fussy part. Every light needs to be hand-placed. Annoyingly you'll have to get your map in-game before previewing the scene, which brings us to...



4 BUILD IT, AGAIN Go make yourself a cuppa, because now you've got to compile your map. Give it a few minutes, and before you know it you're walking around your own creation.

then it's equally the last home for community mapmaking.

Remember mapmaking? Out of the current lineup of competitive shooters, *Counter-Strike: Global Offensive* is the only one that still sports robust level-creation tools. There's a common sentiment among the indie level design community that the field is sort of dead, with modern toolsets ditching efficient design tools in favour of creating more complex, jaw-dropping environments that are harder to tweak on the fly.

Where Unreal and idTech used to sport similar features, the kind of tools that made constructing and reworking arenas frictionless disappeared with Source, and have only really started to make a comeback with... well, Source 2. Source made it really easy to create mods that looked 'professional', without really having to get knee-deep in learning game development.

RESONANCE CASCADE

The Source Engine feels like a snapshot of a singular moment in so many ways. As mentioned, it's a transition between old and new design sensibilities. For the cynical, it's a reminder of the time Valve actually made games. Its modding scene is a throwback to an internet that hadn't yet been consolidated around a handful of websites, a thousand pre-Twitter forums gravitating around their own mods and servers, creating worlds based on

their own sensibilities. Source let modders become developers, with the folks behind the biggest mods now among the more beloved indie darlings. Through machinima and Source Filmmaker, Source let amateurs become animators.

Valve has moved on, and is now fully invested in Source 2. The engine behind *Half-Life: Alyx* and *Artifact* is every bit as capable as its predecessor. Maybe even more so. But the internet landscape has moved on, and Source 2 has yet to see the explosion of

SOURCE MADE IT REALLY EASY TO CREATE MODS THAT LOOKED 'PROFESSIONAL'

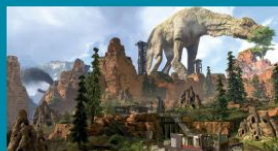
creativity that defined its predecessor. Maybe it'll get there in time.

The Source Engine lives on with Respawn Entertainment. The tech behind *Half-Life 2* is the same tech that powers *Apex Legends*. Sure, Respawn has gutted the thing beyond recognition, crafting worlds the ageing engine could only have dreamt of. But that's only fitting for an engine that itself is duct-taped together from the scraps of *Quake*.

And sometimes, when the low sunlight hits King's Canyon's walls just right, I see the same warm, intangible glow I fell in love with back in City 17's filthiest canal runoff. I see Source, and I know I'm home. ■



RIGHT: Squint, and you can kinda see *Apex Legends* Source engine roots.





As well as being impressive, large ships are dangerous to fighters, and should be avoided.

FREESPACE 2

Jumping back into the cockpit with the classic space sim. *By Rick Lane*

Released in 1999, *Freespace 2* is generally regarded as one of the best space sims ever made. But it's worth bearing in mind that, for a long time, *Freespace 2* didn't have much competition. In the 2000s, space sims almost disappeared completely, with only a handful of notable titles like *Freelancer*, *X3*, and *EVE Online* appearing through that decade. *Freespace 2* was the last of the great '90s space sims, and there appeared to be little new coming out that could challenge it.

Since 2010, however, the situation has changed. Space sims have seen a welcome resurgence, with major projects like *Elite Dangerous*, *No Man's Sky*, and *Star Wars: Squadrons* careening out of hyperspace

alongside a swarm of indie titles like *Evochron Mercenary*, *Everspace*, and *House of the Dying Sun*. Can a 20-year-old space combat simulator really hack it against these newer, glossier, more powerful vessels?

I don't want to spoil the ending, but the answer is a resounding 'yes'. Not only is *Freespace 2* still fantastic, it remains astonishingly fresh.

Playing *Freespace 2* does initially come with a side of narrative whiplash, especially if you haven't played the first game – the somewhat awkwardly titled *Descent: Freespace*. Set 32 years after The Great War depicted by *Descent*, *Freespace 2* drops you smack into the middle of a brewing conflict between a human-alien coalition named the Galactic Terran-Vasudan Alliance, a rebel human splinter-faction called the Neo-Terran Front, and another, much

more dangerous alien faction known as the Shivans – the primary antagonists of the first game.

WTF?

There are more acronyms flying around a *Freespace 2* cutscene than in an episode of *Line of Duty*, though in an age where games tend to guide you by the nose through every plot-point, it's quite thrilling to be unceremoniously dropped into a briefing littered with military technobabble and names of ships and officers you have no frame of reference for. It makes you feel like a rookie pilot, which at the game's outset, is exactly what you are.

Frankly though, the why of the fight doesn't matter much at first. You'll be too preoccupied grappling with how to fight, while cooing at the tremendous spectacle *Freespace 2*'s combat offers. Thanks to a combination of a highly active

NEED TO KNOW

RELEASED 1999	DEVELOPER Volition
PUBLISHER Interplay	LINK hard-light.net



The spritework on explosions is phenomenal.

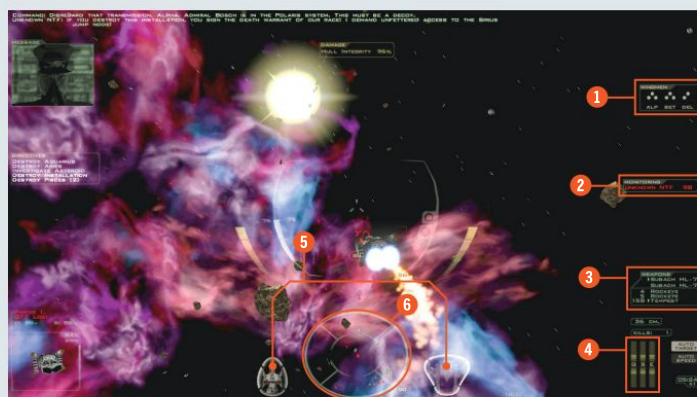
modding community and smart creative decisions of the time, *Freespace 2* has been exceptionally well preserved. The game only looks noticeably old during its few quiet moments, when you've got time to dwell upon the angular spaceships and the painted-on skyboxes.

The moment combat commences, however, *Freespace 2* literally explodes with colour. The pockmarked black of space is suddenly illuminated with motley bands of laser-fire, golden missile-tracers, and the searing green and blue bars of mighty beam weapons from larger ships like frigates and destroyers. Speaking of explosions, *Freespace 2* does those brilliantly too. Damaged ships will trail sparks like clusters of baby stars, before erupting in a bright and soupy fireball. The best moments in *Freespace 2* happen when the largest ships go boom, sending out a massive blue halo as they burst into smithereens.

Sound and scale play equally significant roles in making the game's combat so satisfying. Every weapon in the game's vast arsenal has a palpable weight behind it, whether it's the thud of your lasers or the roar

UNDER THE HUD

There's a lot going on in *Freespace 2*'s HUD. Here's a breakdown



1 WINGMEN
Squadrons' status.
White = fine.
Red = damaged.
Hollow = dead.

2 MONITORING
Displays the health of the key ships that are taking part in the battle.

3 WEAPONS
Shows the available and selected weapons at your disposal.

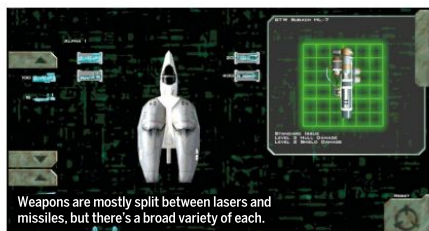
4 GSE
The power level of systems.
G = guns.
S = shields.
E = engine.

5 SHIELDS
Shows the shield status of both your ship (left) and target ship (right).

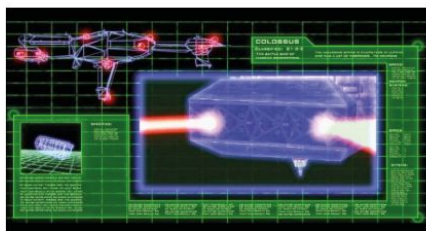
6 MINIMAP
A snapshot of the battle showing enemies and friendly ships.



Freespace 2 does an amazing job of creating galactic spectacle with limited visual fidelity.



Weapons are mostly split between lasers and missiles, but there's a broad variety of each.



of your cluster Hornet missiles. And while *Freespace 2*'s ships may lack the sleek lines and chrome plating of *Elite Dangerous*, larger ships like Destroyers and the GTVA's Colossus are still daunting to approach in your tiny, fragile fighter.

Freespace 2's spectacle effectively draws you in, but what keeps you sticking around is the combat simulation itself, as well as the structure *Freespace 2* builds around it. The basics of *Freespace 2*'s ship combat are familiar stuff. Every ship has six degrees of movement, shields, a targeting and tracking system, and fixtures for various weapons like lasers and missiles. But it's the nuance with which *Freespace 2* represents these systems that makes it so interesting to grapple with.

With targeting, for example, you can cycle through targets as you would in any other space sim. But there are also keyboard shortcuts for specifically targeting hostile ships, friendly ships, the ship currently hovering in your crosshairs, and even specific points on larger ships, like turrets or crucial systems. Similarly, your shields can be managed in a range of different ways. You're able to

shunt shield power to a specific quadrant, or press Q to equalise shield power across your ship. Even movement has multiple shortcuts, letting you instantly max out your throttle, or press M to match the speed of any ship you've targeted.

COCKPIT STOP

All this is designed to give you the tools you need to deal with whatever scenario *Freespace 2* launches at you. Indeed, the breadth of information you need to retain can be a little daunting, but *Freespace 2* mediates

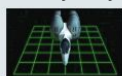
your education through several tutorials in the campaign. Even the first few missions are also designed so you can take a backseat if you need to, letting your AI squadmates do most of the work while you learn how to fight effectively.

Inevitably though, there comes a point where sitting back will simply result in your ship being quickly obliterated. *Freespace 2* can be seriously challenging. It frequently pits you against seemingly overwhelming odds, often tasking you with protecting a station or a convoy with just a few fighters as an entire fleet of enemy vessels slides out of subspace. There were several missions where either my own hull or that of the vessel I was tasked to protect escaped with only a few hitpoints remaining.

This leads onto where *Freespace 2* truly shows its quality – mission structure. Most missions ultimately involve either attacking or defending a target, but *Freespace 2* has a remarkable ability to frame this in ways that make missions thrilling. An early mission sees you trying to stop a rebel cruiser before it jumps into subspace, despite it being too far

SHIP SHAPE

Just a few of the many different ship types



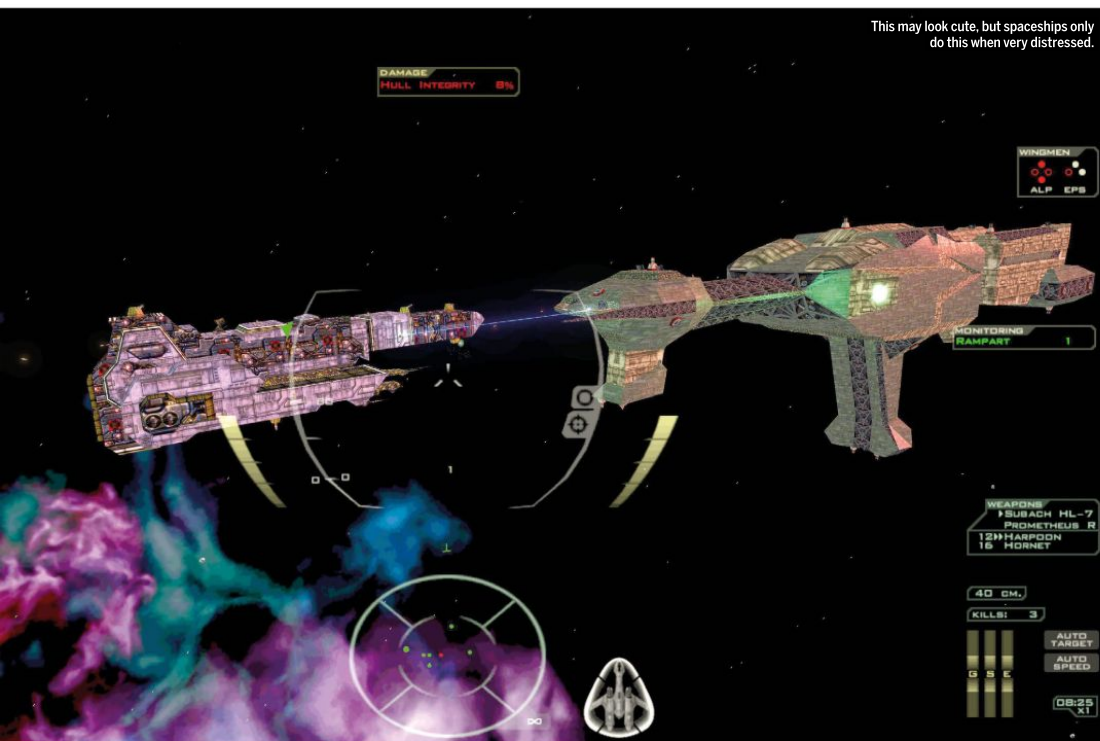
HERCULES
Class: Heavy Assault fighter
Pros: Extra weapon slots
Cons: Low Manoeuvrability



ULYSSES
Class: Space superiority
Pros: High manoeuvrability
Cons: Low armour



GTF LOKI
Class: Recon
Pros: Balanced outfit
Cons: Only one missile bank



This may look cute, but spaceships only do this when very distressed.

AS THE GAME GOES ON, MISSIONS BECOME EVERMORE INTERESTING

ahead to intercept. As it escapes, your wingmates grumble that command deliberately allowed the ship to flee, before you're forced to deal with an ambush by rebel fighters.

DAREDEVILS IN THE DETAILS

As the game goes on, missions become evermore interesting. In the middle of the first act, your faction unlocks a subspace node to a distant nebula. The following mission sees you exploring its purple haze as part of the Suicide Kings – an outfit of daredevil pilots. In the next mission, you return to the nebula to destroy a vast alien ship known as the Ravanna, blind-firing powerful warheads at it while needled by enemy fighters. *Freespace 2* also has a knack for mid-mission twists – a signal on the radar revealing a rebel cruiser lost in Shivan space, or a massive allied ship emerging from subspace to turn the tide of battle when all hope seemed lost.

Curiously, some of the game's best missions are optional. While the campaign is mostly linear, it offers a brief side-story that sees you go undercover as a rebel pilot. These missions are filled with natty twists and turns, such as your co-agent springing an ambush on a rebel convoy without first warning you, forcing you to suddenly fight the wingmen you were flying alongside mere moments ago. In this way, these missions effectively

generate an atmosphere of paranoia, where you're never quite sure what exactly is going to happen, or the extent of the rebels' knowledge about your true identity.

For the most part, *Freespace 2* plays just as well as it did 20 years ago, though there are a few areas where its age is understandably on show. Some of the audio is quite scratchy, particularly cutscenes and briefings. Moreover, the heavy-handed tutorials betray the game's age. If *Freespace 2* was made today, these would be carefully woven into the campaign itself, rather than suddenly pulling you out of the story for a lecture in advanced targeting.

Finally, while *Freespace 2*'s plot is enjoyably twisty, its approach to storytelling is rather cold and impersonal, leaving little room for character development. There is a reason for this – the game wants you to buy into its highly militarised fiction, which is why most of the story is told through briefings with gravelly voiced officers talking in sci-fi jargon. This element succeeds, but the game otherwise fails to imbue much personality into its cast, particularly the player character and

their wingmates. Ultimately, while individual missions are excitingly structured, the story lacks the same colour as the brilliant combat.

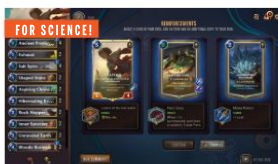
One final point. It's crucial to note that *Freespace 2*'s state of preservation is owed largely to the community, which has created a huge range of mods, visual enhancements, and other support tools that ensure the game runs well on modern machines. If you plan to play *Freespace 2* yourself, I recommend that you download the *Freespace Open Installer*. This includes support for higher resolutions alongside a whole bunch of other inbuilt mods like better quality cutscenes. You'll also need to download Java and a separate Windows executable to get it running, but it's worth the effort.

Freespace 2 deserves its reputation as one of the finest space sims around, remaining every bit as thrilling and elegantly crafted as it was back in 1999. Having not played it in years, I wasn't prepared for how fresh, immediate and exciting the experience is, which is a testament to Volition's talent as a studio, and a fine demonstration of how great design can withstand the passage of time. ■

ROBIN VALENTINE



Tick these games off as you try them, and when you've done them all you can tear out the page and post it to me for a super special prize: the undying respect of the world's greatest magazine editor.



LEGENDS OF RUNETERRA

playruneterra.com

→ The new Lab of Legends mode brings solo adventures to this competitive card game. There's something wonderfully subversive about the way it takes the same cards you use in the tightly balanced PvP mode and lets you stack wacky new effects onto them as you build crazy combos to beat the AI with.



CURSE OF THE DEAD GODS

bit.ly/3dAGuWJ

→ After *Hades*, I thought it'd be a long time before I found another roguelike that wowed me. I tried *Curse of the Dead Gods* on a whim, not expecting much, and was blown away. It's a game that has such a strong sense of what it wants to do, packing every moment with meaningful decisions.



UNAVOWED

bit.ly/20nzoeq

→ So many point-and-click games these days are just throwbacks, riding on nostalgia. Unavowed feels like it forges a proper new niche for the genre in the modern landscape, combining clever puzzle-solving and investigation with Bioware-style world-building, companions, and moral choices.



STAR WARS BATTLEFRONT II

bit.ly/2Rf2MpD

→ Matches of *Star Wars Battlefront II* don't so much put me in mind of the movies as they do childhood memories of bashing my action figures together. With the microtransactions stripped out, what's left is just a huge toolbox of chaotic fun across every era of the series. Slight and silly, but joyful.



A PERSONAL LIST
OF THE BEST
GAMES YOU CAN
PLAY RIGHT NOW

by Robin Valentine



DEEP ROCK GALACTIC

deeperockgalactic.com

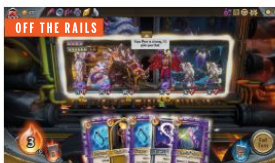
→ My promise to you: I will never stop banging on about *Deep Rock Galactic*. My favourite thing about this co-op dig-'em-up is the incredible sense of discovery, and constant updates have only added to the wonders you can discover. The new biome that feels like being inside a gigantic plant is a personal highlight.



THE JACKBOX PARTY PACK 7

bit.ly/3wEUZ4H

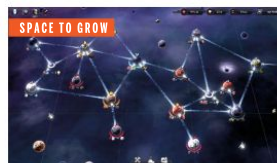
→ There's a real magic to every *Jackbox Party* pack, and it's wonderful to see them never lose momentum. There's a game in this latest offering that's basically just giving improvised Powerpoint presentations to your friends, and it's some of the most fun I've had with a videogame this year.



MONSTER TRAIN

themonstertrain.com

→ The new *Last Divinity* expansion may have actually layered too many new ideas into this anarchic maelstrom of a strategy game – and that might actually be perfect, because *Monster Train* is at its best when you're totally overwhelmed and grabbing at combos like a man drowning in a sea of cards.



SLIPWAYS

bit.ly/37aCDNs

→ Even in its current barebones beta state, there's something really memorable about *Slipways*. Boiling the entire space 4X genre down to a super quick and simple, yet deceptively mindbending, puzzle, it allows you to build an entire intergalactic empire in half an hour, one trade network at a time.



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IT'S ALL OVER...



CRUSADER KINGS LACROSSE

In this rather complicated sports sim, it's considered a good match if you can make it to half-time without either team captain being assassinated or marrying a sibling.

ON THE BALL

More crossover sports games on the horizon for 2021

...UNTIL **MAY 27**



XCOM BASKETBALL

The fog of war keeps each match surprising, though things do have a tendency to grind to a halt as both sides take turns whiffing shots at the basket.



BIOSHOCK CRICKET

The possibility of an errant ball putting a crack in the glass wall separating the arena from the crushing weight of the ocean adds a wonderful tension to each match.



SKYRIM TENNIS

Mostly it just plays like normal tennis, with a similar amount of shouting, but if a ball goes out of bounds it can take upwards of 200 hours to retrieve it.



PORTAL FOOTBALL

Each player has their own portal gun, adding intricate new layers of strategy to the historic sport. You know what, this one's not even a joke. I unironically think this would be great.



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